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SMITHSONIAN DEPOSIT

THE IRON AGE

A Review of the Hardware, Iron, Machinery [illegible] Trades.

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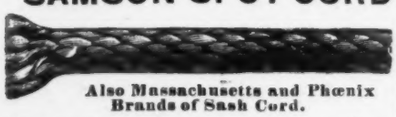

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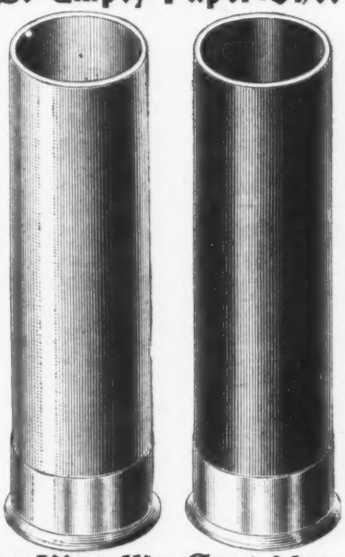

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CAHALL BOILERS See Page 100

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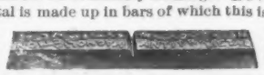

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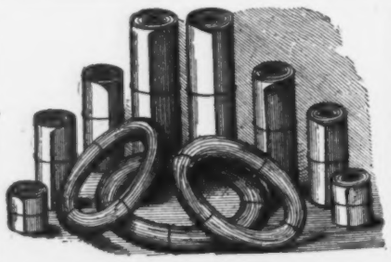

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GEARS

THE IRON AGE.

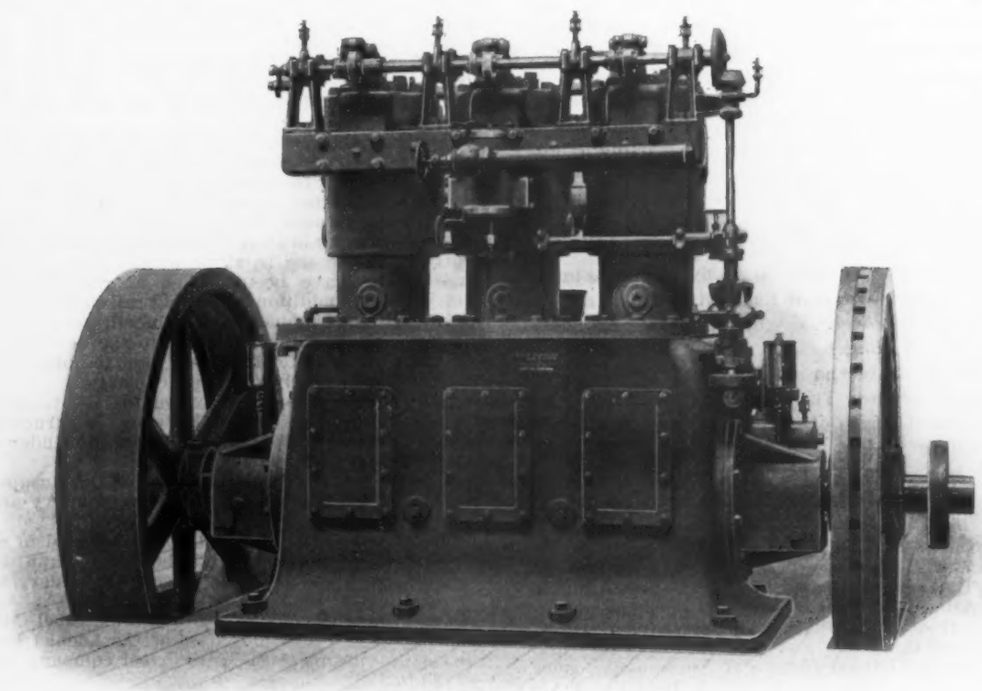
THURSDAY, NOVEMBER 2, 1899.

Gas Engines for Motive Power.

Gas engines are assuming a prominence which can no longer be denied. Fears are entertained in some quarters lest they should drive steam engines out of competition, but the facts do not justify this assumption at present, although what the future may bring forth it would be rash to prophesy. The gas engine, in its improved form, has been a commercial factor for too short a period to be termed a keen competitor with steam motors. Whether eventually it will supplant steam engines will depend largely upon the cost of gas for fuel. It has been proved that Westinghouse gas engines can be successfully built of 650 horse-power, and give as close regulation as the most efficient steam engines; other things being equal, therefore, the question between gas and steam to be decided by the buyer will be solely one of first cost and operating expenses. At present there is no great divergence between the cost of a gas engine and that of a first rate steam engine and boiler plant, although as the manufacture of gas engines increases and becomes standardized the introduction of economies will suggest themselves. Where natural gas is obtainable, or illuminating gas can be had cheaply, the gas plant will probably be selected, on account of the low cost of operation. Westinghouse gas engines have reduced consumption to 11 cubic feet of natural gas per horse-power hour. Taking natural gas at 20 cents per 1000 cubic feet, the cost of fuel for a 650 horse-power engine will not exceed $1.43 per hour.

From present appearances the relative competition between steam and gas engines for central power stations and for isolated plants will be determined largely by the cost of gas for fuel. In districts where a scarcity of water exists the gas engine will have a preference, for the demand for water in a gas plant is limited to that needed for cooling purposes, and where necessary this can be limited to a very insignificant quantity; while the water consumed in a steam plant can only be limited by the use of costly condensing apparatus.

The point of rivalry between steam and gas motors, in which the latter may be preferred, is for isolated engines in works extending over a large area. There is no difficulty in conveying gas by pipes, however long the distances, but there is a distinct limit to the piping of steam, due to the loss by condensation. This field of usefulness is already being filled by gas engines in several large works. Probably the largest single gas engine contract recently made was to equip the Portland cement factory at Iola, Kan., for 12 Westinghouse engines, aggregating 3000 horse-power, including nine engines of 300 horse-power each and three smaller units. Natural gas from a well on the company's grounds will supply fuel. One of these engines is shown in the engraving. In these engines the governor acts by controlling the explosive mixture which is taken into the cylinder. This results in the adjustment of the power of each explosion to the amount of work being done; hence the engine runs with the steadiness and regularity of a first-class steam engine. The regulation is so close that it is possible to operate direct connected electric outfits where the armature of the dynamo is mounted rigidly on the engine shaft, the electric lights being characterized by extreme steadiness.



WESTINGHOUSE GAS ENGINE OF 300 HORSE-POWER.

Since all the cylinders of a three-cylinder engine are

alike, a description of one only will be necessary. When the piston is at the top of its stroke and begins to move downward it draws in a cylinder full of a mixture of gas and air. On the return stroke this charge is compressed into the clearance space between the top of the piston and the cylinder head. The piston having reached the top of its compression stroke, the charge is ignited by the spark formed by opening an electric circuit in the clearance space, causing an explosion, which drives the piston downward on its working stroke, the burnt gases being expelled through the exhaust on the return stroke, which when completed brings all the parts of the engine in position to repeat the same cycle of operations.

The governing apparatus makes it possible to determine accurately the best proportions of air and gas to be used. At the top and bottom of the mixing valve chamber are horizontally moving levers, with pointers swinging over graduated arcs. The upper lever controls the gas supply and the lower one the air supply. The ratio between the readings on the two scales, with the levers in any fixed position, shows exactly the proportions of air and gas in the mixture supplied to the cylinders. When the engine is running on a steady load, if one mixing lever is moved backward or forward while the other remains stationary, the regulating valve stem will be seen to move up or down as the mixture becomes less or more efficient, indicating that a greater or less quantity is being used.

An automatic starter is used in connection with the engine. It consists of a small air compressor driven by the engine, which forces air into iron tanks, maintaining a supply which is kept in readiness for starting at any time. Three or four revolutions with the air pressure are sufficient for starting. The entire operation is strictly automatic and can be accomplished by one attendant without assistance.

The Westinghouse Machine Company now have under construction at their works at East Pittsburgh a gas engine of 1500 horse-power. It will have three cylinders, each 34 inches in diameter and stroke 60 inches. The fly wheel will be 19 feet in diameter and will make 100 revolutions per minute. The engine will be 27 feet high and the combined length of engine and direct connected generator will be 44 feet.

The Delaval Turbine.

At a recent meeting of the Leeds Association of Engineers, at Leeds, England, the president of the association, J. A. Tempest, alluded to the latest engineering industry introduced into Leeds—namely, the manufacture of the Delaval steam turbines, turbine dynamos, turbine pumps, turbine fans, &c., and said that special works have been erected, having an area of 1 acre under cover. The motive power is obtained from a 100-horse-power steam turbine dynamo (to be afterward supplemented by two more), steam being supplied by a 10-foot 6-inch by 10-foot 6-inch marine type boiler with induced draft (Ellis & Eave's patent). A surface condenser of very large capacity is provided, so that all the steam turbine motors may be submitted to an exhaustive test under working conditions before being sent out of the works. The shops will be equipped with machine tools specially designed for the economic machining of the various parts and the larger tools will have separate electric motors to each machine, and the lighter tools will be driven in groups from an electrically driven countershaft. The larger overhead cranes will also be electrically driven, and a light railway will run throughout the works to facilitate transmission of the material and finished machines. The Delaval steam turbine is of the impulse type, a number of nozzles, so constructed that the steam is expanded to the terminal pressure in passing through them, and conducted to a large number of vanes fixed on the periphery of the turbine wheel, which in a 100 horse-power turbine is about 20 inches diameter, running at about 13,000 revolutions per hour, and reduced by gear to 1300 revolutions per minute. The normal consumption is about 20 pounds per electrical horse-power per hour.

W. P. Potter, an attorney, and Geo. W. Eisenbeis, treasurer of the Central Accident Insurance Company, and other Prominent Pittsburgh men, have formed the American Finance & Audit Company, with a capital of $500,000. It is the intention of the company to purchase and hold for investment stocks in business corporations and financial institutions, after a thorough audit has been made of the corporation whose stock is desired. A New Jersey charter was secured for this purpose, as the Pennsylvania laws rigidly limit the purchase of properties and the right to hold stocks in other corporations. The company will practically take the place of the individual in the matter of purchasing and holding securities for investment, with the added advantage that their large holdings will permit them to examine into the condition of the property they intend to buy.

Central Pennsylvania News.

HARRISBURG, October 30, 1899.- The chief trouble in this district among the iron and steel mills is the shortage of fuel. Owing to the aggravated car famine on the railroads, due to the unprecedented demand for transportation facilities at this period of the year, the coal supply is not up to the requirements of the various mills, and in several instances there have been narrow escapes from shut downs. The car deficiency is also causing much embarrassment in the shipments, all the mills making complaints on this score.

The Paxton furnaces, owned and operated by the Paxton Iron & Steel Company, have been turning out a fine quality of iron, and the output has been large. These furnaces furnish the pig iron for the Harrisburg Nail Works, at West Fairview, owned by the Paxton Iron & Steel Company, which have been running steadily since the start last July. The product is muck bars, and the monthly output is 750 tons. Seven of the nine furnaces are operated, and the bi-weekly pay roll foots up over $2000. Last week there was an advance of 10 per cent. in the wages of all employees at this plant not working on a tonnage basis.

The Harrisburg Boiler & Mfg. Company will probably erect an additional building to accommodate a rapidly increasing business. A foundry addition has just been completed, and a new riveter installed.

The Pennsylvania Steel Company have about completed the changes in their rail shipping yards, which will greatly facilitate the handling of the heavy shipments. Large orders have been booked at the Pennsylvania Steel Works, in addition to the big rail orders of the important railroad companies, which will keep all the departments running steadily far into the new year. The coke supply was better last week, and the blast furnaces were worked to nearly their full capacity.

A new dump is being provided for the Lochiel Furnace and mills. A bridge is being constructed over Spring Creek, and when this is finished the cinder will be dumped on the lowlands beyond.

John Q. Denny, general manager of the Susquehanna Steel Company, says the orders are very heavy and that the outlook is very bright.

The Standard Steel Company have decided to enlarge their plant, at Burnham, and the Logan Iron & Steel Company, located at Lewistown, are enlarging the capacity of their works.

It is understood that the Pennsylvania Steel Company are negotiating for the purchase of the Lochiel Furnace, which has been operated by the steel company under a lease since 1895

About 6000 tons of steel will be required for the viaduct on the Burmah railways, now under construction by the Pennsylvania Steel Company. The third and last shipment of materials will leave New York on November 25 by the steamer "Monmouth." The bridge and construction department is also getting out materials for the long bridge over the James River, at Richmond, Va., and for the several bridges on the line of the railroad to be constructed in Cuba by the Cuban Steel Ore Company, who will also build a steel pier 1000 feet long about 30 miles from Santiago.

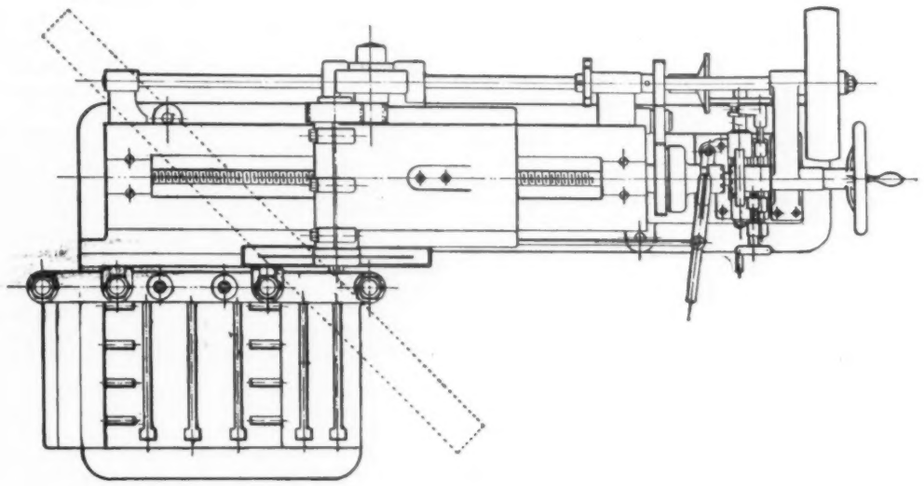
The other day a representative of a San Francisco mill was here trying to place an order for 100 tons of bar iron for quick shipment. He had visited a number of Eastern mills without success. S.

B. F. Perkins & Son, Holyoke, Mass., issue a neat catalogue calling attention to their line of improved ventilating and exhaust fans and in this is inclosed a book of testimonials from many concerns who have used them for years. A great variety of fans are shown including the improved Perkins fan with high speed engine connected.

In describing the new plant of the Bullard Machine Tool Company of Bridgeport, Conn., the generators were referred to as being of the Bullock type. As a matter of fact they are of the Westinghouse type.

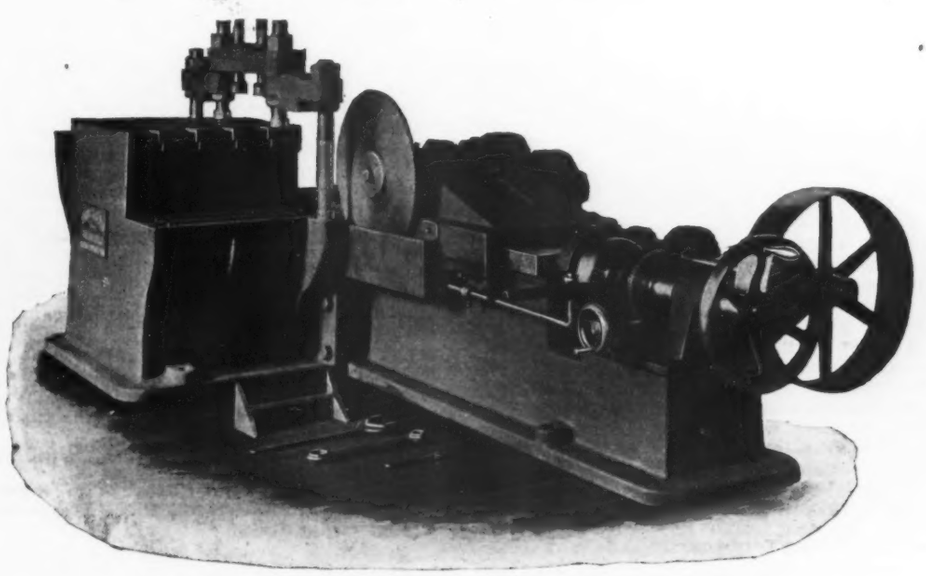
Lucas & Gliem Universal Cold Saw Cutting Off Machine.

The accompanying engravings show a cold saw cutting off machine built by Lucas & Gliem, Philadelphia, for cutting beams, shapes, shafts, rods and a variety of other materials. As will be seen by the plan an I-beam



PLAN OF COLD SAW CUTTING OFF MACHINE

or similar shape may be cut in one cut, either on a straight line or at any angle up to 45 degrees. Beams or long shapes are cut on the low square table seen at the side of the machine, sections on top of the table, and rounds in the V, making the machine universal as regards its capacity for work. The tool has a variable automatic feed, and is provided with an automatic stop and quick movement to the saw carriage by power in either direction. The saw runs in a bath, which keeps it



LUCAS & GLIEM UNIVERSAL COLD SAW CUTTING OFF MACHINE.

well lubricated at all times. The construction of the machine is covered by letters patent.

A new varnish for aluminum, of German origin, is described as follows by an English contemporary: Dissolve 100 parts of gum lac in 300 parts of liquid ammonia, preferably in an enameled vessel, heat being applied for about an hour. When cold, the varnish will be ready for use. Before coating with this preparation the aluminum must be carefully pickled or cleansed with potash and dried by gentle heat. After applying the varnish the object is placed in a stove and heated for some time to a temperature of about 570 degrees F. Aluminum goods thus treated may be painted, &c., without any fear of the decorations peeling off.

Soil Pipe Foundry in New York.

Under date of October 20 the National Foundry Company announce that they have purchased the entire equipment of the Union Iron Works for the manufacture of cast iron soil pipe, fittings, sinks and plumbers' iron ware, and have established their northern plant on the property formerly occupied by the Lewis & Fowler Mfg. Company as car shops and foundries at Sandford street, running through the block to Walworth avenue, near Flushing avenue, Brooklyn, N. Y., they having a complete line of patterns for standard, medium and extra heavy pipe, fittings, sinks, &c., and expect to be in full operation within 30 days. The National Foundry Company have secured as their foundry manager E. G. Blakslee, who was the founder of the E. G. Blakslee Mfg. Company, predecessors of the Monitor Iron Works.

The Columbia Bridge Company, designers, manufacturers and erectors of steel bridges and buildings, and all classes of structural steel work, have opened offices in the Conestoga Building, Pittsburgh. The new plant of this concern is located in Edenburg, Lawrence County, Pa., on the lines of the Pittsburgh & Lake Erie and Pittsburgh & Western railroads. The officers are: Joseph Kountz, president and treasurer; Jos. L. Kountz, secretary, and Geo. W. Knopf, engineer and manager.

The New York State Commerce Convention.

Having its inception in the New York Board of Trade and Transportation, the first State Commerce Convention opened in Utica, October 10, and laid the foundation for work which cannot be estimated, and the results of which cannot be unsuccessful. The delegates represented the brightest business men of the State, all the principal cities and many towns being represented. It is impossible in this report to give all the addresses, nor more than brief summaries. The Erie Canal and taxation were the subjects discussed.

G. Waldo Smith, president of the Wholesale Grocers' Association of New York, called the convention to order, and stated the object: "We are here to discuss measures by which the commerce of the State can be promoted and the interests of the State advanced. The views of this convention should be crystallized in resolutions and submitted to the Legislature to be put into legislation. The canal and Hudson River did much to build up the State, and the day will come when they will be more useful to the State than ever.

The Erie Canal.

Hon. John D. Kernan, of Utica, in an address on "The Loss of Canal Commerce Through Railroad Competition and Discrimination, and Its Remedy," referred to the days when the Erie Canal always presented a busy scene, and was a large factor in transportation. To-day statistics tell us that railroads are doing the business cheaper and better. Since canal grain carriage from the West to Atlantic seaboard ports has decreased from 32 per cent. of the total in 1873 to 3 per cent. in 1898, it may be asked of what further use are the canals? How and why have railroads thus vanquished New York State canals in competitive strife for traffic? In the answer to this question lie the lessons to be learned if we are to maintain in efficiency the grandest public work that our forefathers ever built—the greatest regulator of railroad rates for 50 years past upon this continent. Even in its decrepitude, railroads from the Mississippi to the Atlantic bow to the Erie as soon as the ice is broken, and keep their rates lowered until it freezes. Railroads have won their victory to a great degree by the expenditure upon terminal tracks, elevators and warehouses, while the State has hardly dockage enough to berth a boat decently. There would be no limit to canal business were adequate terminal facilities added to a suitable waterway. Illegitimate railroad practices and discriminatjons have done much serious damage. For years it has been a common practice to compel shippers, in return for favorable rates, to agree to ship nothing by canal. By the agreement of New York railroads with the other trunk lines a constant differential of 1 cent a bushel on grain is given to the trunk lines between all Lake Erie ports from Buffalo to Fairport, Ohio, and the cities of Philadelphia and Baltimore. In other words, New York railroads prefer that their so-called competitors shall carry all the lake grain that they do not get themselves rather than that a canal boat should get a pound of it. The most alarming feature is the control railroads have secured over canal terminals. At both Buffalo and New York the elevators and warehouses, if not absolutely owned by railroads, at least act in such concert with them as to secure from all canal grain rates for transfer service so high as to be practically prohibitory. The proposed enlargement would be entirely useless unless there be added at Buffalo and New York wharfage and elevators where grain and merchandise can be stored and transferred at cost under State control. This latter measure is the key to the whole situation.

Erastus Wiman of New York spoke on

"Water Terminals."

He said: "While for water commerce New York has all the elements of greatness, for a mixed commerce by land and water it is of all ports most expensive, from the fact of the complete separation of the point of receipt from the point of storage; and the point of storage from the point of shipment. We receive three-fourths of arrivals in Jersey City; we store all that is to be stored in Brooklyn, and we ship nine-tenths of the shipments from New York. In other ports the freight car, the transfer storehouse and the steamship are side by side. The cost of transfer by lighterage in the harbor of New York, between the points of receipt, storage and shipment, is invariably 3 cents a hundred pounds, or $18 for an ordinary 30-ton car. It costs more to take a barrel of flour from the point of its arrival near the Battery to 125th street, 10 miles, than from Duluth to Buffalo, 1000 miles. New York can have the cheapest kind of freight if it will only give the canal proper terminals. The fathers provided ample facilities by the canal district at the junction of the East and North rivers. By statute these ten piers were set apart and reserved to the canal forever. But for the sum of $35,000 a year the Dock Commission of the city has leased this property to the railroads of the State—the greatest crime of the century. Three large docks should be constructed at Buffalo and new terminals with double decked steel warehouses in New York.

George B. Sloan of Oswego spoke on

"The State Canals and What Should Be Done With Them."

No plan of canal improvement can be begun until it has been voted upon by the people. They must know the cost of any improvement. They would vote down a ship canal because of the cost. If anything of this magnitude is contemplated, it must be by the Federal Government. The first plan is the Seymour plan, which is to continue the improvement already begun, requiring $15,000,000 more. This would reduce the cost of transportation nearly one-half. The second plan is to widen all locks to 26 feet, lengthening them to 260 feet and deepening them to 11 feet. This would allow much larger boats to be used, reducing the cost of carrying a bushel of grain from Buffalo to New York to 1.18 cents. This would require from $30,000,000 to $50,000,000. No plan should be submitted to the people except in its entirety, and they should be treated with sincerity. Governor Black's commission regarded the Seymour plan as the most feasible.

Ex-State Engineer Martin Schenck of Troy, on the same subject, said: "I am in favor of the retention of canals and their vast improvement. The Seymour plan will add to the carrying capacity of boats 50 tons, but will this plan be adequate to the demands of commerce? A ship canal is not feasible. An ocean steamer with her high hull is impracticable. Lake vessels as they are now are not likely to use it to any great extent. I have devoted twenty years to the study of canals. I am convinced that neither a ship canal nor the present canal are wanted. A canal which could be used by barges would be the most feasible. This would insure the commercial supremacy of New York for a hundred years. The canal can be shortened in some places. The towpath can be done away with, as the vessels will be moved by steam or electricity. The locks should be 260 feet long and 26 or 27 feet wide. Don't abandon the canal. Enlarge it as I have outlined and you will be repaid a hundred fold." Mr. Schenck submitted plans prepared by himself for enlarging the canal at a cost of $35,000,000.

John P. Truesdell of New York, on the same subject, said he spoke from the standpoint of a New York merchant, who knew the efficiency of the railroads, the inefficiency of the canals and the efficiency of the waterways of Canada. A large portion of the products of the West and Northwest must continue to go to the seaboard via the great lakes and the canals. Since the completion of the Welland Canal Canada has demanded an increased share of commerce. Before the end of this year the Welland Canal will be navigable for vessels 255 feet long and 42 feet beam. The canal will be 14 feet deep. By constructing a canal from Georgian Bay to Toronto and another from Georgian Bay to Montreal, the route from the lakes to the seaboard can be made 1000 miles shorter than it now is through New York. To successfully compete with Canada we must have a canal 14 feet deep, with locks 260 feet long. Such a canal will carry a vessel of 1500 tons, and it can carry grain at 1 cent per bushel from Buffalo to New York at a profit. The cost of carrying grain from any lake port to New York would then be only 2 cents per bushel. No railroad could compete with this.

G. H. Raymond of Buffalo dealt with the

"Possible Commercial Future of the State in the Iron and Steel Traffic from a Proper Improvement of the Erie Canal."

The string of great cities and the host of smaller cities and villages from Buffalo to New York clustered along the easiest line of movement from the great West to the seas owe their prosperity primarily to the canal. Pennsylvania is pre-eminently the manufacturing State of this country. Iron and steel are to-day the commercial barometers of the world. Pennsylvania, possessing the first discoveries of iron ore and following it up with her inexhaustible beds of coal, naturally took the leading position in the iron traffic. With such a start it has not seemed possible that Pennsylvania would ever be attacked in respect to this position. However, it is to-day possible to wrest from Pennsylvania a very large portion of her iron and steel traffic and bring it within the borders of this State. There is but one thing that can prevent this and that is the absolute stupidity of its citizens in respect to the Erie Canal. There seems to be but one proper plan for the improvement of the canal. Take down one side of one tier of locks, set that side back 7 feet. Lengthen it so as to move boats 125 feet long

with 25 feet beam and deepen it so that boats can draw 8 feet of water. If it cost $100,000,000 it would be money well expended. But it will not. It requires but a trifle of consideration of the present course of the iron and steel traffic in this country to see why Pennsylvania must lose it to a very great extent and also to see that nothing can prevent New York State reaping what Pennsylvania sowed many years since. The ores of Pennsylvania have never been exceedingly rich. Cheap coal made this ore profitable to work when nothing better could be had. Recent years have brought out the most marvelous deposits of iron ore in Michigan, Minnesota and Wisconsin. These deposits are virtually great mountains of ore. Situated only 80 to 150 miles from lake transportation it is very easily moved to the lakes. The enormous increase in size of lake craft from 600 tons to over 7000 tons has decreased further the cost of carrying, so that to-day the ores of the Northwest, carrying as high as 65 per cent. of the best iron in the world, are moving in millions of tons down the lakes each year. The great blast furnaces of Pennsylvania have abandoned almost entirely the use of any other ore, except occasionally for mixing purposes. It is not possible to abandon these enormous plants like Carnegie's, but they are running at a much greater cost than would be the case at Buffalo. As the demand for Northern ores increased, Mr. Carnegie, to save a trifle of profit that other roads were charging for moving ores from Lake Erie to Pittsburgh, recently built at his own cost a new road from Conneaut to Pittsburgh. To further decrease the cost an effort is being made to build a canal from Lake Erie to Pittsburgh. All this is being done simply to enable Pittsburgh to hold her own. She cannot compete with New York State at any cost if the canals are properly improved. A glance will show Pennsylvania's helplessness. The Northern ores are now loaded on 7000 ton steamers and moved to Conneaut, we will say, for shipment to Carnegie's works. The lake freight to Conneaut is exactly the same as to Buffalo. At Conneaut it is placed on the rails and moved to Pittsburgh at a cost of 96 cents per ton. After it is smelted, run into pigs, or rolled into beams or shapes, for the export or New England traffic, it is then again placed on the rails and moved to New York or Philadelphia at a cost of $2.50 per ton on pig iron and $3 per ton on steel beams, &c. Approximately, it takes two tons of ore for a ton of pig. This makes a ton of pig iron laid down in New York via Conneaut and Pittsburgh at a cost for freight of $4.42.

Now look at the course of this traffic via the State of New York. The ore as noted will be delivered as cheaply at Buffalo as at Conneaut. It will there be dumped directly into the smelter and made into pigs or steel same as at Pittsburgh. Then it can be freighted on the lock widened and deepened Erie Canal from Buffalo to New York at 50 cents per ton. There is just one thing that must be borne in mind. At present coke costs more at Buffalo than at Pittsburgh. Coal costs a trifle more, but if we allow the added cost at Buffalo of $1 per ton on the pig iron or beams we will more than cover the additional cost. Therefore, we have the cost of a ton of pig iron made at Buffalo and laid down in New York, including the allowance of higher coke and coal, at $1.50 per ton, against $4.42 via Pittsburgh. It should be added that just at this time a new coke supply is to be opened up at the Reynoldsville district which will practically lay coke and coal down as cheaply in Buffalo as is now done in Pittsburgh. Here is a saving to-day of almost $3 per ton if iron is made at Buffalo, over Pittsburgh. A saving in freights of $1 per ton would mean $2,500,000 on Carnegie's output alone. This would pay close to 5 per cent.

With such a canal it will be possible to lay down at New York steel beams and plates at a lower rate than can be done at any other point on the Atlantic coast. If New York can buy ship's plates and beams cheaper than Delaware by $3 per ton, nothing can prevent the building up along the shores of New York Bay of the greatest shipbuilding plants in the world, and the cities along the Hudson would get their share of these plants. Utica, Syracuse and Rochester and other cities would be able to buy their iron and steel for a less price than New York and Hudson River cities. The advantages that must accrue to the wage earner and retail business are evident. The farmer would be benefited by having a larger and better market for his products.

Would it not be a proper thing to so amend the constitution that a permanent commerce commissioner could be appointed whose sole business it would be to watch all tendencies of commercial activity outside the State in their bearings on all lines of commerce in this State, so that he could recommend to the Governor what course should properly be taken to check such tendencies from injuring the commerce of the State?

Dr. S. A. Robinson, of New York, presented the matter of terminal facilities at Staten Island and urged that it be used for that purpose. He considered it the finest piece of undeveloped shipping property in the world.

During a discussion as to whether canal or rail transportation was cheaper, John D. Kernan said: "It has been said that railroads can carry freight cheaper than the canal, no matter what condition you put the canal in. For the sake of argument, concede that to be true. It does not affect my position. It isn't the fact that railroads can carry freight at a certain cheap rate, but something that will compel them to carry it at that cheap rate that we want. The wit of man has never been able to compel railroads to carry freight as cheaply as they can carry it. In 1885 the Legislature tried to fix maximum and minimum rates. I spent months on the question and found it could not be done. It is a species of tyranny, an invasion of individual rights. Even if the State could fix the rates, they would be rendered obsolete by changed conditions, and the Legislature could not be called together every time a change was needed. The only way to keep freight rates down is by maintaining the canals in condition for active service."

Report of the Committee on Canals.

The Committee on Canals presented their report, and the resolutions were enthusiastically adopted:

Whereas, The commercial supremacy and the prosperity of the city and State of New York were created by conditions of traffic which were developed by the Erie, Oswego and Champlain canals, and that from their inception these waterways have been efficient factors in preserving such prosperity and supremacy;

Whereas, The neglect in maintaining these canals in suitable condition and the inefficient methods of transportation employed thereon have resulted in the decline of their efficiency and relative usefulness, so that they have become less important factors in controlling freight rates from the West to the Atlantic seaboard than formerly, principally because the same intelligence which has brought about the great development of the railroad systems, thereby increasing their cheapness of service and efficiency, has not been brought to the canal systems;

Whereas, The Dominion of Canada, recognizing the power and influence of sufficient waterways in determining the course of traffic, has enlarged the canal connecting the great lakes with Montreal, and is contemplating the construction of a canal connecting Lake Huron directly with the St. Lawrence River and thereby has increased the importance of Montreal and other Canadian seaports in such a way as to seriously threaten the trade of American ports;

Resolved, That the Erie, Oswego and Champlain canals ought to be materially improved to maintain the commercial supremacy of the State, thereby promoting the prosperity of its people.

Resolved, That the outlay in making such improvement would be a wise investment of money for the people of the State. With due regard, however, to public economy, we believe that the policy of the State should be on the line of improving the canals to secure the greatest benefit from the disbursement made in the shortest time. The improvements must be progressive and calculated to attain a definite object and so made that each step will be complete in itself and give immediate benefits to commerce.

The discussion of railroads and railway legislation was then taken up without any formal programme, after which the subject of taxation was considered.

Taxation in New York.

F. B. Thurber, president of the United States Export Association of New York, on the subject, "Taxation of Business Capital," said: "The business interests of the State are the State's breadwinners and should not bear more than their share of the burden of taxation—in any case not more than competing business interests in neighboring States. The central idea of our tax law is equal taxation of all property. This is just and correct in theory, but in practice it has been found impossible to reach a certain class of property represented by securities which can be hidden in stockings, tin boxes, or if necessary kept out of the State, so that all that remains is to tax all visible property as equally as possible." He gave illustrations of injustice found in the different rates at which capital owned by firms and individuals is assessed and taxed as compared with that employed by business and industrial corporations. Firms doing a large business without being taxed on the stock of goods or accounts receivable, when turned into a corporation are assessed, and taxed up in the thousands. He criticised the inequality in our tax laws as found in the way banks are taxed as compared with trust companies. In 1897 banks in New York State were taxed at a rate more than five times greater than the trust companies. In Pennsylvania trust companies are taxed higher than banks, about 8½ mills against 6 mills for the banks. In a tax on account of the canals over three-quarters of the tax is borne by the counties on the canals, while the

regulative influence of the canals on freight rates affects the most remote counties.

Lawson Purdy, secretary of the New York Tax Reform Association, said: The first principle of taxation is that it should be so laid that persons owning the same class of property should compete on equal terms, even with people owning the same class of property in other States. Taxation upon personal property in this State is as bad as any lottery. The value of personal property in any community must always be proportionate to the value of real estate, but the report of the State Board of Tax Commissioners shows the most extraordinary variations. There are towns in this State where it is the boast of assessors that manufacturing industries are not taxed at all. There are other towns where they load every dollar on the manufacturing industries that they can impose, thus making competition between manufacturers unfair. Reports show that the exemption of manufacturing plants has been one of the greatest sources of prosperity to Baltimore and that the impetus thus given to the establishment and extension of manufacturing industries in that city has far exceeded in value the taxes which have been abated.

Legislative reports in 1894 on the taxation of mortgages showed plainly that not more than 3.28 per cent. of the mortgages in this State are taxed, although the law provides for the taxing of all mortgages. The injustice is appalling of taxing all of one man's property when less than 4 per cent. of the same class of property is taxed throughout the State. To sum up:

The interest of trade and commerce demands the abolition of taxes upon personal property, because taxes are unequal upon property of the same kind, and upon persons owning the same class of property within the State, and they are burdensome as compared with the conditions in neighboring States. Taxes upon manufacturing plants are necessarily unequal, prevent their establishment and drive them away. They tend to increase the cost of goods and to place the burden of taxation upon those least able to bear it. Taxes upon merchandise are unequal and tend to obstruct trade.

Taxes upon mortgages either fall upon a small part of the community and are therefore confiscatory, or, being imposed on all mortgages increase the burden of those in debt. The tax on mortgages in this State costs real estate owners in increased interest at least seven times as much as the State receives. Taxes upon banks and trust companies must finally be paid by the business community. The true remedy is to abolish the taxes upon both. The organization tax tends to prevent incorporation within this State and should be reduced to a nominal sum. The general property tax is the worst tax known in the civilized world.

An instructive paper, by Allen R. Foote of Takoma Park, D. C., was read on the same subject and in many points harmonized with the views of Mr. Purdy and Mr. Thurber.

Report of the Committee on Taxation.

The Committee on Taxation reported as follows, and the report was adopted:

Resolved, That steam, electricity and machinery have become such controlling factors in the industrial and commercial world and necessitating the employment of capital co-operating on so large a scale to utilize their advantages, and labor and capital are each so dependent upon the other that neither can prosper without the aid of the other;

That the Empire State should offer at least equal advantages with our sister States for the co-operative employment of labor and capital, and the many partners known as stockholders in corporations should not be more heavily taxed than partners in business firms;

That any burdens upon capital employed competitively should be equal and to this end the great disparity in the taxation of banks and trust companies should be equalized;

That the driving of thousands of millions of New York capital to other States to incorporate, this State thereby losing millions of dollars in revenue, is an absurdity which cannot be too soon remedied by making our tax laws and regulations affecting industrial corporations at least as favorable as those of New Jersey;

That as soon as possible all capital engaged in production and trade should be exempt from taxation, to the end that our manufactures may be developed, our labor kept fully employed and a home market created for our farm products;

That we agree with the report of the Legislative Committee of the State Grange, made in 1894, and indorsed by many commercial bodies and granges throughout the State, that the tax on mortgages is paid by real estate owners, that it is double taxation, that it keeps interest rates up, that as a question of public policy this drain on the producing class of the commonwealth should be remedied, and the remedy is not by taxing debts of this class which results in making them, and necessarily the whole commonwealth, poorer;

That inequality in the assessment of real estate is a serious obstruction to trade and commerce, and that to remedy this evil this convention adopts the recommendation made again and again by the State Board of Tax Commissioners to the effect that in assessing real estate the value of the land and of the improvements thereon should be separately stated, as has been done for several years in the city of Buffalo and several neighboring States;

That inasmuch as the attempt to directly assess and tax personal property has never been able to reach more than a very small proportion of it, and has produced great inequality and injustice in the taxation of that which has been reached, it is our opinion that it would be better to entirely exempt such personal property from direct taxation, leaving real estate without any increased burden to be taxed for local purposes only.

A recommendation was made that a committee of three be appointed to apply to the Dock Department of New York City for docks for the purpose of Erie Canal boats and freights. This was referred to the Executive Committee with power.

Resolutions were also adopted petitioning the Legislature of the State to take into serious consideration the advisability of establishing in New York City a permanent commercial and industrial exposition commensurate with the grandeur and dignity of the Empire State, and the importance of its wonderful resources and industries.

The convention adjourned with cheers for the President of the United States and for Mr. John D. Kernan, president of the convention.

While the delegates felt that they were probably only sowing what some one else would reap, yet they were fully satisfied that the convention had carried out the objects for which it was called. There is no reason why the Legislature should not know what the business men of the State want in the way of canals and taxation. It is intended that the addresses and proceedings be published and scattered broadcast through the State, as a matter of education on the subject.

The Committee on Permanent Organization were wise in their selection of John D. Kernan of Utica as president. He was especially fitted for presiding officer, because of his previous connection with railroad commissions.

Converting Utah Lignite.

Under the developments of the Hemingway coking patents Utah promises to become the Connellsville of the West. These patents are under the control of L. Z. Leiter and his son, Joseph Leiter, who constitute the financial support of the Universal Fuel Company of Chicago, of which W. E. Rothermel is general manager. The latter gentleman interested his friends in Utah to the extent of their making a shipment to Chicago of a car of lignite coal from the great deposits in Iron County in that State. The result of the conversion of this lignite in the Hemingway ovens has proved successful beyond the expectations of all parties interested. It was demonstrated that the bee hive oven, with the patented improvements attached, can be used with charges of coal from the run of the mine, or, as it is commonly termed in mining circles, the "mine run."

In the drawing of an oven of the Utah coal of 5 tons' capacity the delivery consisted of such sizes as are required by smelters and for foundry, domestic and forge use, and this from large lumps which had to be broken to get into the oven, all of which are of a semi-anthracite nature, or an anthracite coke, after the treatment. The color is that of silver and it runs so high in fixed carbon as to rank with the best anthracite. It has been named the Silver King by Brigham Young, who, with C. H. Kraft of Salt Lake City, has secured the right from the Leiters, on behalf of the Universal Fuel Company, to use the Hemingway patents for Utah. While this is an important feature in itself, pertaining to the converting of a lignite and bituminous coal to a semi-anthracite, there is also another important development to be expected in that quarter in the manufacture of pig iron. By analysis, as made by the Leiters, it was found that the iron ore of Iron County, Utah, also existing in great deposits, yields 65 per cent. This can now be utilized, which heretofore was impossible on account of not having the necessary fuel.

Another important feature is the fact that the Utah branch of the Universal Fuel Company will, in the near future, be in a position to supply the Pacific Coast with coke as against imported coke. It is a well-known fact that the entire coast does not produce 10 per cent. of its consumption of coal, to say nothing of the coal being non-coking. This fact, in connection with this new source of supply being located in the far West, will

give it a market via Los Angeles. The new departure will, no doubt, prove an incentive to the line of railroad known as the Salt Lake & Los Angeles. It is the intention of Mr. Young and Mr. Kraft to locate ovens in other sections of the State, giving all coals an equal opportunity for improvement.

The Dodge System in a Cotton Mill.

Among the recent large contracts closed by the Dodge Mfg. Company of Mishawaka, Ind., is a complete installation of pack shaft and rope drive outfits to be put in as a portion of a series of improvements and alterations recently started by the Eagle & Phœnix Mills of Columbus, Ga. This mill is one of the largest in the South, the total capital being $750,000, and the rapidly increasing business has made it necessary for them to inaugurate a series of improvements and alterations to enable them to cope with the enormous growth of the business. A large addition to their No. 3 mill has already been contracted for, and the water power plant has been increased by a new set of wheels aggregating 2000 horse-power.

The Eagle & Phœnix Mills, through their engineer and officers, made a very careful investigation of the several methods of connecting their water wheels to the several mills by transmission machinery, and finally decided upon adopting the Dodge system. The engineering for the Dodge Mfg. Company was conducted by Geo. N. Vanderhoef of the New York office of the company and W. L. Draper of the Atlanta branch.

A list of the transmissions is as follows: Two main drives of 700 horse-power each, one of 110 horse-power and two of 95 horse-power each. These are all to be outdoor drives and of the Dodge continuous winding system. These drives will require over 2 miles of rope. Proper rope to be used was an important item, and the company decided to adopt the Dodge Firmus blue strand rope as being of the highest efficiency and the most economical for the installation, the item of first cost not having entered into the matter so much as the durability and cost of maintenance.

In connection with installing the above transmissions there is a large amount of auxiliary transmission machinery, which has also been awarded to the Dodge Mfg. Company. The project is probably the most important of any transmission installation ever attempted in the South up to this time.

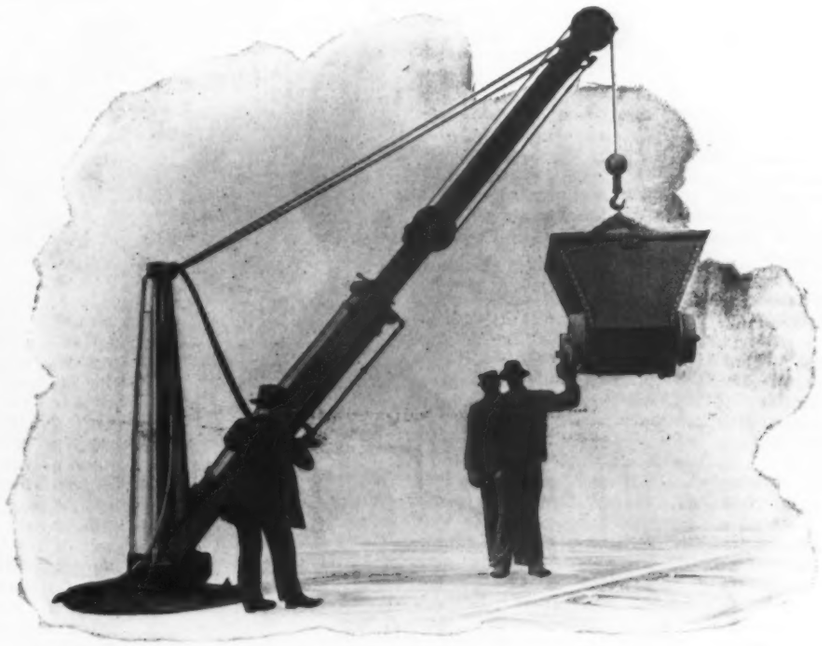
The reorganization of the power plant of this mill is due to the progressiveness of its president, G. Gunby Jordan, who is identified with nearly every financial and industrial enterprise in Columbus, Ga. Mr. Jordan's consulting engineer is William C. Whitner of Rock Hill, S. C., chief engineer of the Amderson Electric Light, Heat & Power Company and also chief engineer of the Columbus Power Company. Some very clever engineering has been planned by Mr. Whitner in connection with the new power plant for the Eagle & Phœnix Mills, and by an ingenious arrangement of the wheels he has gained nearly 10 feet more head than was had formerly, making a total head of 27 feet and saving thousands of dollars in minimizing rock excavations which would have otherwise been required to utilize the full power of the water.

Peck Brothers Company.

The business of the Peck Brothers Company, New Haven, Conn., under the reorganization, has shown a gratifying development during the past several months and the concern have plans under way for extension of their business which will be of considerable interest to local holders of the company's stock. Both the New York and Boston warerooms of the company have recently been moved to new quarters, where enlarged space has been taken and a considerable amount laid out in fitting up attractive salesrooms. The work has been under the supervision of Manager Downs and representatives from the offices in this city.

The New York office of the Peck Brothers Company will hereafter be on Forty-second street, near Fifth avenue, to which place removal was made recently from the old office on Cliff street. The Boston agency has also been moved from Broad street to the corner of Hollow and High streets. No steps have been taken at present to reopen the Chicago agency, which was closed at the time of the Peck Brothers' failure.

No dividend has been declared as yet under the reorganization, it being considered better to put the money into extension of the business, and it is probable that this policy will be adhered to until the trade is thoroughly established. The concern have gone more than ever into the line of sanitary plumbing manufactures, and this department is the one most fully presented at the new salesrooms, which are now open.



THE WHITING COMPRESSED AIR PILLAR CRANE.

The Whiting Compressed Air Pillar Crane.

The accompanying illustration shows a new compressed air pillar crane, built by the Whiting Foundry Equipment Company, Harvey, Ill., for use by one of the leading Western railroad companies. This crane is of heavy construction, and built for arduous service. The pillar is of heavy cast iron, and the boom is made of structural steel well braced. The supply of air is conveyed to the cylinder by rubber hose. The hoist is made direct from the cylinder, which is placed between the members of the boom and is connected by wire rope passing over the pulley with the hook and load. By this arrangement all gearing is dispensed with, and the movements are easily and quickly controlled by valves which enable the operator to balance the load and guide its movements at will.

Lucian Sharpe.

Lucian Sharpe of the Brown & Sharpe Mfg. Company of Providence, R. I., died at sea, on the North German Lloyd steamer "Saale," on October 17.

Lucian Sharpe was born March 20, 1830, in Providence, R. I., and continued to live there until 1836 when, for a few months, he lived in Boston, Mass. From the spring of 1837 until the spring of 1840 he lived with his uncle, Pitt Sharpe, in Pomfret, Conn., on the farm where his father, Wilkes Sharpe, was born, and which has been in the family since his father's great grandfather came there from Brookline, Mass., in 1721. In the spring of 1840 his father purchased a farm in Hartwick, Otsego County, New York, and on this the family remained for two years. The farm was then sold and his father returned to Providence, the mother and boy remaining for two years longer in Hartwick, at the home of Mrs. Sharpe's brother, Ebenezer Chaffee; and during this time the son attended Hartwick Seminary. In 1844 the mother and son returned to Providence, and the education of the boy was continued at the Elm Street Grammar School, and after that for two years at the Providence High School. He served a five years' apprenticeship with Joseph R. Brown, and in 1853 a partnership was formed under the name of J. R. Brown & Sharpe. At the same time about 14 men were employed. The business steadily increased, and in 1858 a contract was made with the Willcox & Gibbs Sewing Machine Company to manufacture all their machines.

LUCIAN SHARPE.

In 1866 the fine scale and measurement business of J. R. Brown & Sharpe was united with that conducted by Samuel Darling of Bangor, Maine, under the corporate name of Darling, Brown & Sharpe. The Brown & Sharpe Mfg. Company and Darling, Brown & Sharpe ran along separately, yet under the same roof, till Mr. Darling's death, January 1, 1897, when the latter firm were absorbed. For a long time he was a director in the Willcox & Gibbs Sewing Machine Company of New York. Since 1881 he was a trustee of the Providence Institution for Savings, and at the time of his death its vice-president; from 1879 to 1891 he was a director in the National Bank of North America, and had served in a similar capacity since 1897 in the Rhode Island Hospital Trust Company. For some years he was vice-president of the Union Railroad Company, in 1883 he was made director in the Providence Gas Company, and had been president of the *Providence Journal* Company since 1886.

During the 50 years of his connection with his company the workshops increased in area from 1800 square feet to 283,000 square feet and the number of employees from 14 men to a working force of 1500. He took great interest in the men in his employ, and for their welfare he established a shop library containing about 2000 volumes, and augmented a movement whereby the apprentices might have an association, with meetings in working hours, in which lectures could be held and the benefit of mutual improvement enjoyed.

Mr. Sharpe early developed the faculty of appreciating what was useful in a mechanical device, and it was soon noted that he had excellent taste for the best forms for machines or tools. His characteristics were rendered unusually efficient by concentration upon a definite purpose—the advancement and success of the business. All matters of personal ambition and comfort were subordinated to this, his desire for prominence being limited to advancement in and through the growth of the business. In the conduct of the business he was plain spoken and positive and extremely orderly and methodical. As far as possible responsibility was placed upon those associated with him, his principle being to insist upon results rather than upon the exact methods used by subordinates. He left to each, in a large measure, the opportunity to exercise his judgment with the understanding that, if successful, advancement was assured; and in this way, while exercising to the utmost a very great capacity for work, Mr. Sharpe was able without detriment to leave the business to his subordinates, when occasion required a number of months of absence. In his early years Mr. Sharpe learned to read and speak French readily, and his general reading and attainments were of such a nature that the degree of A.M. was fittingly bestowed upon him by Brown University in 1892.

From the outset Mr. Sharpe shared Mr. Brown's determination that only the best quality of work should be sold, and each had for the other a warm regard and sincere respect. They were congenial in many ways, and each helped and influenced the other, and their partnership, with their mutual confidence, insured satisfactory returns. Mr. Brown's inventions indicate his talent, and were the basis of the business, but its growth was due chiefly to Mr. Sharpe's energy and ability.

In 1867, having determined that it was a poor business which could not for a time run itself, Mr. Brown and Mr. Sharpe together visited the first International Exposition in Paris, where the firm had an exhibit, and they were so impressed with the importance of such expositions that the company has exhibited in all the large ones since that date, and in all of them they have obtained leading awards. The machines and tools exhibited have never been specially prepared for exhibition, and have always been the same in finish and design as those regularly manufactured, and their originality, their fitness for the purpose for which they were designed, the excellence of their workmanship, the convenience with which they could be handled, and the progress that they have shown in design over those in earlier expositions have invariably been commended. At present more than 60 different machine tools and 300 varieties of small tools are catalogued and manufactured, and many of these are sold in all parts of the world.

For the last two years Mr. Sharpe had been prevented by illness from very active participation in the business of the company. In the summer of 1898 a stay at Bad Nauheim, in Southern Germany, was very beneficial to him, from which place he returned with hopes of partial recovery. Again last spring he visited the same resort with every prospect of his health being still more repaired. In the middle of the summer he had a setback, from which he never recovered. He died at sea on the North German Lloyd steamer "Saale," Tuesday, October 17. His body was brought to Providence and was buried from the First Congregational Church on Tuesday, October 24.

The Sheet Mill Consolidation.

Reliable advices indicate that the proposed combination of sheet mills in the Central West, which has been under way since last spring, will hardly be accomplished. The principal difficulty in the undertaking has been to finance the deal, the present condition of the stock market not being favorable to floating large enterprises. It will be recalled that in the summer, when Judge W. H. Moore of Chicago went on his vacation, the options given by the sheet mills were extended to November 1. In the case of one large interest an effort was made within the last few days to have them extend their option to March 1, and then to January 1, but without success. The concern referred to absolutely declined to renew their option, and it is not believed the deal can be put through without them. It is also certain that a number of mills would not agree to renew their options on the present values. The past six months have been exceedingly profitable in the sheet trade, many of the mills having low priced sheet bars, and have in consequence made a very large amount of money. While the deal may possibly be taken up in some other shape, as proposed on present lines it will not go through.

Our attention has been called to the fact that in referring to the new bar and rod mill at New Haven in *The Iron Age* of October 26 the statement was made that it is located on the Connecticut River. It should have been the Quinnipiac River.

The Gorton Universal Disk Surface Grinding Machine.

This machine is intended for the rapid and accurate finishing of metals, hard or soft. It will grind off rough surfaces on drop forgings, dies, &c., or do the finest kind of finishing. It will also grind faces to an accurate right angle or any intermediate angle between 45 and 90 degrees, producing parallel surfaces. The disks are true and flat, and emery cloth or paper being cemented to them by means of the press furnished provides a true cutting surface from which accurate work must result. The absence of grooves in the disks, and the high speed, 1800 revolutions per minute, cause them to cut faster than a solid wheel. The emery cloth or paper disks are secured to both sides of steel disks with a quick drying cement, used cold, and requiring one-half to three-fourths of an hour to dry. Worn sheets are readily stripped from the disks. These tools are particularly adapted to the finishing of dies, gibs and keys, engine straps, chuck jaws, parts of machine tools, &c.

The special features are enumerated below.

The pedestal and head stock is a heavy one-piece casting with two projecting arms at the top supporting the working tables. This construction gives a rigid support to tables, which are thus free from vibration, a very important point for quick, accurate work. The arbor is 1½ inches in diameter, accurately made of crucible steel mounted in adjustable halved bushings, to take up end motion, with compression grease cap over each. The steel disks, which are 18 inches in diameter, are made of flange steel; they may be used either face out, and should have emery cloth disks cemented to both sides. The sliding table (at the right) is controlled by means of the hand lever shown, and has a steady motion at all points of its stroke, without jerk or vibration on the heaviest cuts. This lever may be released on any part of its stroke without damage to either the machine or work, and the table will remain at rest, to be used if desired without sliding motion. The sliding surfaces are self oiling, dust proof, and cannot be exposed when changing disks. An adjusting gib is provided in the table. The front edge has a milled tee slot, to which is secured the protractor square. The capacity of the oil reservoir in the table slide is ½ pint. The slide supporting the table has a vertical adjustment of 3 inches with screw and hand wheel, and can be firmly clamped to the supporting shoe by means of the clamping nut provided. Relieving this clamping nut will not allow dust or dirt to settle between the sliding surfaces, a heavy spring maintaining their contact. The working surface of the table top is 8 11-16 inches wide, 18¼ inches long and is accurately square with face of disk. Adjustment is provided in the shoe supporting the table, to allow of sliding motion being made parallel with disk face. The supporting shoe is clamped to the top of the pedestal arms by means of two studs, relieving the nuts on which allows the shoe and table intact to slide outward just sufficient to change disks. Pushing the shoe inward and tightening the nuts brings the table back to its original position. The protractor square is secured to the milled tee slot in the table edge, is adjustable in degrees to the face of the disk, and has endwise adjustment to and from the disk. The universal angular table (at left) is 13 inches wide, 17 inches long, provided with protractor square, which may be secured to either the lower end or right edge. The table has a graduated angular adjustment through 45 degrees, also lateral adjustment for setting the top plate close to the disk. It may be firmly clamped. Vertical adjustment is 5 inches. The supporting shoe and adjustments are the same as on the sliding table. The disks are quickly changed without disturbing the angular or any other adjustment of the table.

THE GORTON UNIVERSAL DISK GRINDING MACHINE.

The manufacturers are the George Gorton Machine Company, Racine, Wis.

The Foundrymen's Strike at Pittsburgh Settled.

On Monday morning, October 30, the striking machinery molders and core makers at Pittsburgh resumed work at the foundries, pending arbitration of the labor trouble which has existed among the foundries in that city for some weeks. A meeting of the molders and core makers was held on Sunday afternoon and it was decided by vote to consent to arbitration. Committees will be appointed from the men and another composed of local members of the National Founders' Association, and if a settlement cannot be reached the whole trouble will be referred to the national organization of the molders and founders and new committees will be appointed to settle the trouble. The following foundry firms have agreed to accept the decision of the Arbitration Committee: Mesta Machine Company, Frank-Kneeland Machine Company, William Yagle & Co., Limited, Starritt-Thomas Foundry Company, Totten & Hogg Iron & Steel Foundry Company, Fischer Foundry & Machine Company, Hydraulic Machinery Company, Pittsburgh Malleable Iron Company, Brittan & Mathes Iron Company, Taylor, Wilson & Co., Limited, all being represented in the National Founders' Association, and the Springfield Foundry Company, James Lathwood, Phillips & McClaren, N. Kelly & Son, Union Foundry & Machine Company, Lewis Foundry & Machine Company, W. J. Early & Sons, Limited, Kinzer & Jones Mfg. Company, Rosedale Foundry Company, Porter Foundry & Machine Company, Limited, Thomas Carlin's Sons Company, Pittsburgh Mfg. Company, Pittsburgh Foundry & Machine Company, American Steel Casting Company, McVey & Walker, National Gear, Wheel & Foundry Company. In addition to these there are several others who will accept the decision of the Arbitration Committee. Among the latter are the Keystone Bridge Works and the Pittsburgh Locomotive Works.

Isaac W. Frank, president and general manager of the Frank-Kneeland Machine Company of Pittsburgh, who is secretary of the third district organization of the National Founders' Association, has made the following statement relating to the agreement of the men to accept arbitration:

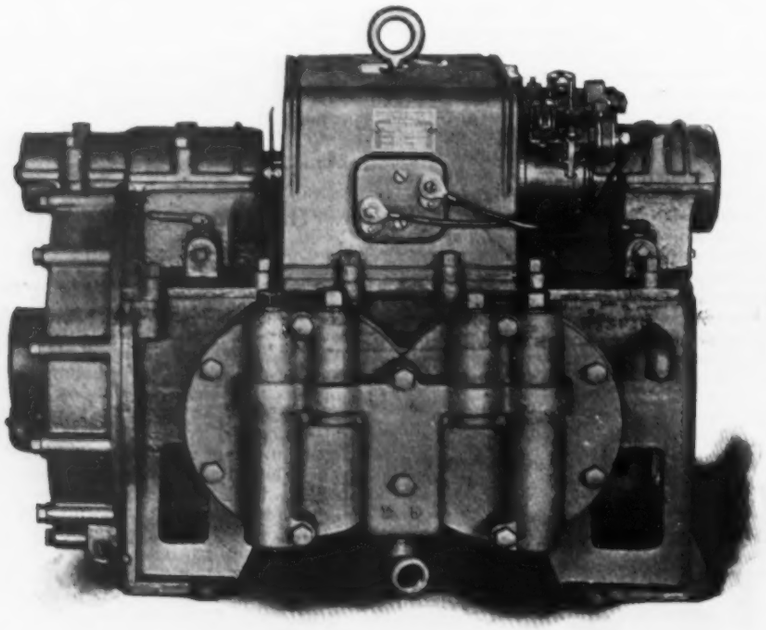
"We regard this as a happy ending of the molders and core makers' strike. Arbitration wins and the great principles established between the Iron Molders' Union of North America and the National Founders' Association by the New York agreement will be carried into practical effect. After a four weeks' contest of strength between the molders and core makers and the foundrymen of this vicinity, the former have accepted the proposition of the manufacturers, made at the commencement of this strike and made again yesterday. It now only remains that details be arranged, and that the men return to the respective shops on Tuesday at the same wages and under the same conditions existing on September 30. Both employers and men agree to submit the demand of the latter to arbitration in the hands of the two national organizations. Should an award be made favorable to the men it shall take effect as of the day they go to work."

Suit was entered in the United States Circuit Court at Pittsburgh last week by Edward C. Underwood, doing business as the Emerald Nail Company of Chicago, against P. W. Dietly, doing business as the Erie Machine Shops, at Erie, for $100,000 damages for an alleged breach of contract by the defendant in the delay of the delivery to the plaintiff of 30 nail machines. In an amended affidavit $20,000 additional damages are asked for the alleged failure to deliver four machines on time and for 20 never delivered. The defendant denies that the plaintiff suffered any damages, and states that there was no contract to furnish the machines, and further alleges that the plaintiff was not in a financial condition to make the sale advisable.

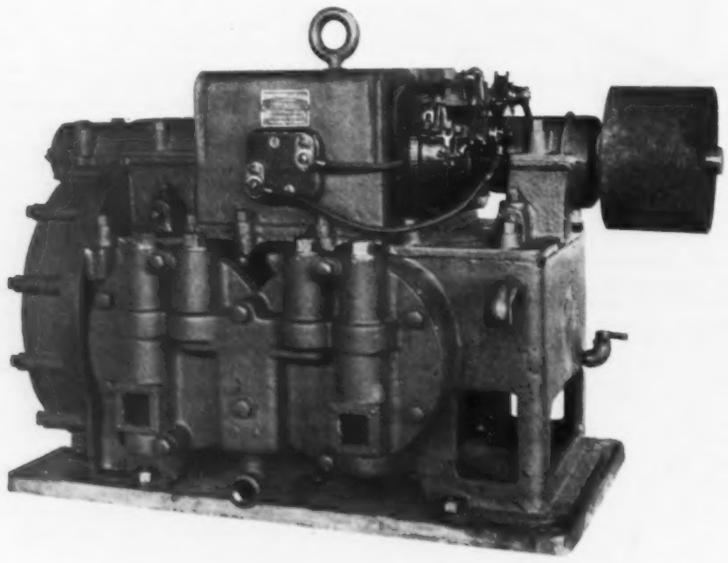
The Christensen Electric Motor Compressor.

The Christensen Engineering Company, 718 to 728 Hanover street, Milwaukee, Wis., have had much experience in building combined motors and air compressors in connection with air brake work for electrically propelled passenger cars. This experience has led them to determine that a machine of this class is thoroughly practicable and durable, and may be applied to general use for air compressing. Since the introduction so generally of electricity for lighting and power purposes it has become practicable to operate small compressors with electric motors. Illustrations are given herewith of a combined motor and compressor of this character, requiring no foundation, may be either stationary or portable and can be run from a convenient lamp or street railway circuit.

As shown in Fig. 1, the machine has two cylinders. These contain single acting plunger pistons fitted with an improved form of packing. In machines of large capacity three or more cylinders are used with pistons operating from the same crank shaft. The connecting rods are operated by a steel crank shaft with the cranks set at such an angle as to give the best balance of the moving parts. The crank shaft is extended at one end for receiving the gear wheel meshing with the pinion of the armature shaft directly above. The base of the motor forms the top cover of the compressor base. The gears are also inclosed in suitable casing. The armature shaft revolves in extra long bronze bearings with ring oiling arrangement, and is provided with an oil siphon device.



End View of Christensen Compressor



Machine Arranged for Driving Line Shaft.

THE CHRISTENSEN ELECTRIC MOTOR COMPRESSOR.

It will thus be seen that the interior of the compressor is completely inclosed. The space in the compressor base is partly filled with oil through filling elbows provided for that purpose. These latter also gauge the proper hight of oil in the gear casing. Experiments have shown that with one supply of oil the compressor runs for several weeks without replenishment. The suction and discharge valves are conveniently arranged in the cylinder

back cover in such a way that each is independent of the other. If one of the cylinders should in any way get damaged, so as to disable the compressor, the defective cylinder can be cut out by removing the suction valve. The discharge valve acts then simply as a check valve, and the remaining cylinders will still be operative, but of course in that event the capacity of the compressor is reduced by just the capacity of the disabled cylinders. Furthermore, the suction and discharge valves are alike in every particular, and may be interchanged without affecting the operation of the compressor, provided that the seats have worn equally so as not to interfere with the tightness of the valves. The motor is so constructed that by unscrewing a few bolts the armature and fields can be removed or exchanged without disturbing any other parts of the machine. The gear, pinion, valves or cylinder heads may also be removed without disturbing any other parts.

The compressors, especially the smaller sizes, are constructed to run without water jackets, as in most instances it would be cumbersome and inconvenient to have a water jacket arrangement on the portable compressing apparatus. The compressor will run about one minute in three without any undue heating. The motors are also specially designed for that service, being of the series type and so constructed that they are started and stopped without using resistance of any kind. In cases where the motor compressor is to be stationary the armature shaft may be extended beyond the bearing at the commutator end and a pulley mounted thereon, as shown in Fig. 2, to drive a line or counter shaft, in which case the compressor should be thrown out either by removing the suction valves or disconnecting the discharge pipe, and if changes from one to the other are frequent an outlet valve may be arranged in the discharge pipe. When the change is not made frequently the compressor may be cut out altogether by removing the pinion. In this case the oil well at the gear end of the armature shaft should be occasionally filled through the opening supplied for the purpose. To change back to the compressor, the belt should be removed.

A simple and effective governor stops the compressor whenever the pressure has reached the maximum and starts it whenever the pressure has dropped to the minimum.

The New Little Giant Pneumatic Hammer.

The Standard Pneumatic Tool Company, Marquette Building, Chicago, have aimed in the construction of the new Little Giant pneumatic hammer to overcome the difficulty experienced in the use of tools of this character arising from their delicate mechanism and multiplicity of parts. They believe these objections have been minimized in their new hammer, which is made expressly to withstand hard service, having no valve block and consequently two less joints to keep tight. An air regulator is provided which can be so adjusted as to admit a minimum amount of air and also deliver a blow with the full force of the hammer under various pressures, thus making it easy

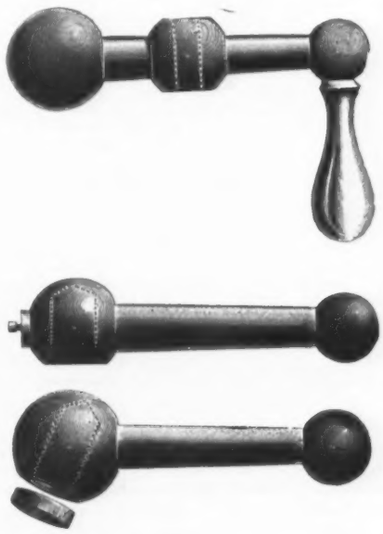
THE NEW LITTLE GIANT PNEUMATIC HAMMER.

to operate. On the return stroke the hammer cushions on the exhaust air, thereby consuming much less air than hammers which cushion on live air admitted before the piston completes its stroke. The new hammer is strongly constructed, so as to be as durable as possible, and the manufacturers claim that they are the most efficient tools of their class. An advantage they possess and which will be appreciated is that they can be easily taken apart and reassembled when repairs are required.

Western newspapers are noting the great activity in the collection of scrap, caused by the high prices now ruling for such material. A paper published in Central Iowa states that farms have been relieved of the wrecks of agricultural machines, dismantled plants of all kinds have been overhauled for the metal that might be in them, the highways and byways have been narrowly examined, and all the refuse that could be found has been collected, sorted and sold at prices that have netted the wholesale men large sums. It is probable that never before in the history of that locality has there been such activity in this line, and the freight is an important item to railroads. The same vigorous collection of old material is proceeding in other localities, adding greatly to the supply now on the market.

Steel Ball Machine Crank Handles.

The Norwood Bicycle Company, 62 Plum street, Cincinnati, are making a specialty of steel ball machine crank handles. These are turned from solid steel and are light



STEEL BALL MACHINE CRANK HANDLES.

and susceptible of a high degree of finish. They are manufactured with key ways or ready for tapping, and in any special sizes or shapes. The stock handles produced include the three styles shown in the engravings, the first being the regular handle with center ball, and large or small end ball; the second is an ordinary two-ball lever handle ready for tapping and fitted with a set collar; the third is a handle adapted for tail stock center tightener on lathes.

Last week deeds were passed by which six properties located on Diamond street, directly in the rear of the 15-story office building of the Carnegie Steel Company, limited, Pittsburgh, became vested in the Union Steel Company, recently organized in Pittsburgh, and who are reported to be very closely affiliated to the Carnegie Steel Company. The consideration involved in the deal was $195,000 cash, and the six properties referred to compose the block bounded by Diamond street, Cherry, Scrip and Relief alleys. The property has a frontage of 120 feet on Diamond street and the uniform depth is 95 feet to the rear of the Carnegie Office Building. An office building will be erected that will be very similar to the Carnegie Building and will be used as an annex to it. The Carnegie Building has been taxed to its utmost capacity for several years, and the office requirements of the Carnegie Steel Company have extended so fast that they now occupy almost the entire building, which is 15 stories high, and is probably the most imposing and complete office building in Pittsburgh. It is likely the building will be erected by A. W. & R. B. Mellon, who are largely interested in the Union Steel Company, and under an agreement similar to that under which the present Carnegie Building was erected by Mrs. Thomas M. Carnegie. This agreement provides that the entire investment of Mrs. Carnegie in the Carnegie Building and grounds shall pay her a certain rate of interest, all fixed charges being borne by the Carnegie Steel Company. The recently organized Union Steel Company will have their offices in the new building, that concern now having two rooms in the present Carnegie Building. It is expected that work will be commenced in a very short time. When the present Carnegie Building was erected excavations for the foundation were unusually deep, owing to the fact that a number of springs were found, and quicksands were also encountered. The tunnel of the Panhandle Railroad also passes close to the building and made the work of securing a solid foundation very difficult. Piles were driven to the depth of 30 or 40 feet and on these the foundation rests. It is probable the same plan will be pursued in the erection of the new building.

Experiments Upon the Action of Engine Governors.*—II.

BY WILLIAM GEORGE HIBBINS.

Porter Governor.

Speed curves for a Porter governor, which was loaded with a central weight of 33 pounds, the small balls each weighing 2.58 pounds, are given in Fig. 18. The throttle valve spindle was connected to a lever in a similar manner to that shown for the Watt governor. The valve itself was of double equilibrium type, and weighed 2.75 pounds. It will be observed that the working curves given by this

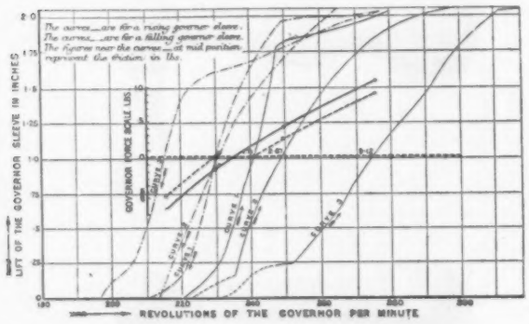


Fig. 18.—Speed Curves for Porter Governor.

governor are much more regular than those given by the Watt. Three pairs of curves were taken under the following conditions: 1. Without the valve being attached to the governor lever. 2. With the valve attached and the nut of the stuffing box screwed moderately—*i.e.*, under working conditions. 3. With the stuffing box screwed tightly.

Even with the working curves there appears to be a considerable amount of frictional resistance in the governor and at the valve spindle, especially when the sleeve nearly reaches its highest point. The heavy central weight, however, overcomes this, and the sensitiveness of this governor was considerably greater than that of the Watt, being 0.082 as compared with 0.011 for a 1 per cent. variation of balanced speed.

The sleeve in this case is at mid-position when at a distance of 1.015 inches from its lowest position. The loads are due to the weight of the throttle valve and the frictional resistance at the stuffing box. The load for curve 1, 1 is 0, because in this case the throttle valve was not attached to the lever. For the load points of curves 2, 2, 2.43 pounds must be plotted upward for the up curve, because the forces opposing the upward motion of the sleeve, reckoned at the center of governor spindle, amount to 2.43 pounds, and act vertically downward. For the down curve (1.02 — 1.41) pound = 0.39 pound

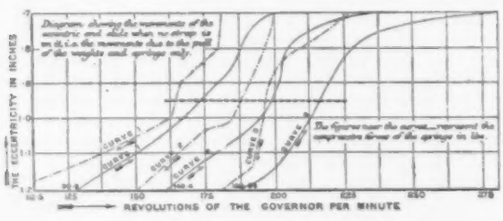


Fig. 22.—Speed Curves for Turner-Hartnell Governor.

must be plotted downward, because the forces tending to oppose the governor sleeve are now acting vertically upward; — 0.39 pound downward = + 0.39 pound plotted upward, and therefore in the diagram 0.39 pound is plotted upward from the mid-position line. The force required to lift the throttle valve at mid-position for curves 2, 2 is 5 pounds, equivalent to 2.43 pounds at the center of the governor spindle. For the down curve the weight of the throttle valve must be subtracted from the frictional resistance. The weight of throttle valve = 2.75 pounds = 1.41 pounds at center of spindle. For the load point of curves 3, 3 similarly 8.75 is plotted upward for the up moving curve and 7.34 — 1.41 pounds = 5.93 pounds plotted downward for the down moving curve, the friction forces in this case acting vertically upward. (For the up moving curve friction = 8.75 pounds to 1.41 pounds = 7.34 pounds; for down moving curve 1.41 pounds must be subtracted from 7.34 pounds.) Joining the load points thus obtained the two straight lines of the figure are traced, and the calculations as before give the following results:

	Pounds
For the curves 1, 1, friction	= 1.71
For the curves 2, 2, friction	= 2.87
For the curves 3, 3, friction	= 9.12

The governor is intended to run at a mean speed of 260 revolutions per minute, and 1 per cent. of this = 2.6 revolutions The controlling force = 1.04 pounds; the

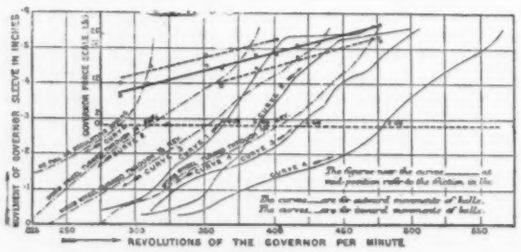


Fig. 19.—Speed Curves for Pickering Governor.

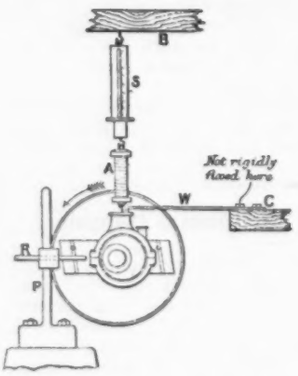


Fig. 21.—Turner-Hartnell Governor.

Fig. 20.—Turner-Hartnell Shaft Governor.

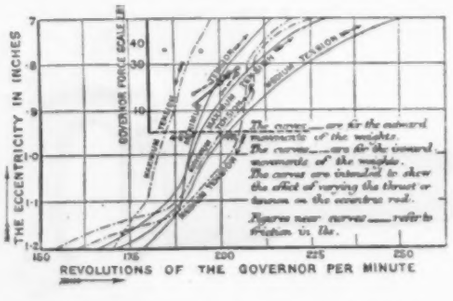


Fig. 23. Effect of Different Loads, Fig. 22.

sensitiveness (for curve 2) = 0.082; and the controlling energy = 4 × 1.04 × 0.08 inch-pound = 0.3328 inch-pound.

Pickering Governor.

Four pairs of curves obtained from a Pickering governor which controlled a 2-inch throttle valve are given in Fig. 19. Curves 2, 2 represent most accurately the working conditions. There was considerable frictional resistance at the stuffing box of the valve spindle, although this was not screwed tighter than when actually working on an engine. The controlling force of this governor was not very large for its size, and its sensitiveness was not as great as that of an ordinary Porter governor. A load could be placed on the valve spindle by means of a worm wheel and a spiral spring, and the four curves were

* Paper presented before the Institution of Civil Engineers, London

traced with the worm wheel turned through different angles, and producing upon the spindle pressures of 8, 13.33 and 22.16 pounds in its successive positions.

In this case the sleeve is at mid-position when 0.28 inch high. The curves are traced by plotting off the load upward from the mid-position line as before and the following results are obtained:

	Pounds
For the curves 1, 1, friction	= 4.28
For the curves 2, 2, friction	= 3.85
For the curves 3, 3 and 4, 4, friction	= 3.58

The normal speed of the governor is supposed to be 400 revolutions per minute, and 1 per cent. of this is four revolutions equivalent to four-fifths of one horizontal division. The controlling force = 0.424 pound, the sensitiveness (taking curves 2, 2) = 0.018 and the controlling energy = (0.424 × 0.018 × 4) = 0.0305 inch-pound.

Turner-Hartnell Shaft Governor.

This governor was tested by mounting it on a mandrel and running it steadily at different speeds in the lathe, and with the springs at different compressions, the eccentric strap being taken off. When these observations had been made the eccentric strap was put on and an arrangement was made, as shown in Fig. 20, for applying a load. The wire W was so fixed as to prevent the eccentric strap from swinging round. The load was applied by means of the strong spring balance S and the strong, thick india rubber band A. The vertical stalk P was fixed on a bracket bolted to the lathe bed. The pointer R was arranged to touch the same point of the eccentric strap every revolution, and as the throw of the eccentric became less, due to the governor weights opening, it had to be moved inward until it again touched the eccentric strap. The alteration in the eccentricity was measured directly between two fine parallel lines, one being drawn on the fixed socket carrying the pointer, thus being fixed, and the other on the pointer itself.

The following are details relating to this governor:

Diameter of governor disks ...	= 15⅛ inches.
Diameter of shaft	= 1¾ inches.
Average resistance of the first spring	= 135.3 pounds per inch compression.
Average resistance of second..	= 99 pounds per inch compression.

The springs were compressed when the governor weights opened, as shown in Fig. 21. The lengths of the springs without any compression were 4½ inches (strong spring) and 4 17-32 inches respectively. The weight of each flyer was 9.8 pounds. The speed curves, taken with the eccentric strap removed are shown in Fig. 22. The springs were screwed until the length of each was 4⅛ inches in curve 1, 3⅜ inches in curve 2 and 3.71 inches in curve 3. When the weights were fully extended their length was 3 1-16 inches. These curves possess remarkable features, the chief being the great decrease of speed required to cause the weights to move inward after they have reached their outermost position.

The governor was constructed to run at 200 revolutions per minute, and it will be observed at this speed curve 2 is a little irregular when the weights are opening and also when they are closing.

In Fig 23 is shown the effect on curve 2 of applying different loads on the eccentric strap by means of the spring balance and india rubber strap. With the greatest load the pull on the strap varied between 34.5 and 37.5 pounds, averaging 36 pounds. With the medium load the pull on the strap varied between 24 and 26.5 pounds, averaging 25.25 pounds. With the minimum load the pull on strap varied between 15.75 and 18.25 pounds, averaging 17 pounds. The forces plotted on the diagram are the average forces here given. As will be seen, the effects on the governor were irregular. With the medium tension acting the governor the sensitiveness was altered from 0.023 to 0.016, and the speed for keeping the weights at mid-position from 197.7 to 211.8 revolutions per minute. For curves 1, 1, taking the strength of the stiffer spring at 94.8 pounds per inch of compression, the spring pressure calculated from its variations of length will be 35.55 pounds when the weights are closed, 136.3 pounds when the weights are fully extended and 85.92 pounds at mid-position. In the same way, taking the weaker spring as having a strength of 91.1 pounds per inch, the spring pressures will be 37.0 pounds when the weights are closed, 133.8 pounds when the weights are fully extended and 85.4 pounds at mid-position. At mid position, therefore, the spring pressure may be taken at the mean value of 85.66 pounds. Repeating the same calculation for the curves 2, 2, the spring pressure at mid-position is found to be 108.86 pounds, and for curves 3, 3 it amounts to 123.73 pounds. At mid-position of the gear the balancing speed in the case of curves 1, 1 is 173.5 revolutions per minute, while for curves 2, 2 it is 198.7 revolutions per minute and for curves 3, 3 it is 216 7 revolutions per minute. Com-

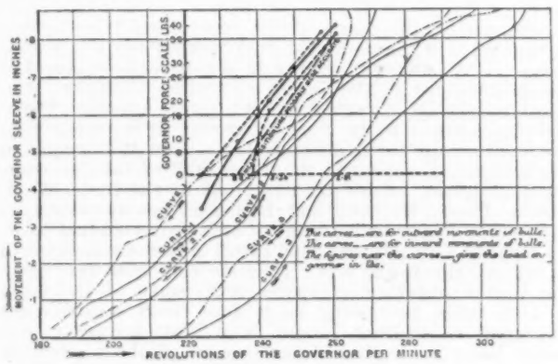

MOVEMENT OF THE GOVERNOR SLEEVE IN INCHES
GOVERNOR FORCE, SCALE LBS
REVOLUTIONS OF THE GOVERNOR PER MINUTE
The curves are for outward movements of balls.
The curves are for inward movements of balls.
The figures near the curves give the load on governor in lbs.

Fig. 26. · Speed Curves for Bellis Governor.

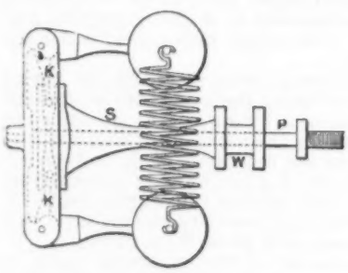


Fig. 24.—Bellis Governor.

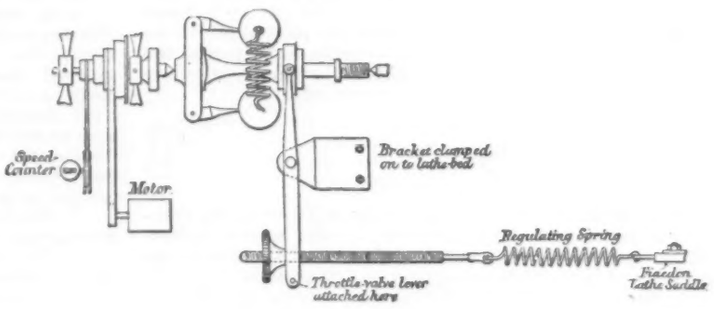


Fig. 25.—Regulating Attachment, Fig 24.

EXPERIMENTS UPON THE ACTION OF ENGINE GOVERNORS.

paring curves 1 and 2, therefore, for a unit increment of speed (one revolution per mirute), the increment of spring pressure is: $\frac{108.86 - 85.66}{198.7 - 173.5} = \frac{23.2}{25.2} = 0.92$ pound.

And comparing curves 2 and 3 for the same increment of speed the increment of spring pressure amounts to $\frac{123.73 - 108.86}{216.7 - 198.7} = 0.82$ pound.

Therefore the average increase of pull of one spring for an increase of one revolution per minute $= \frac{0.92 + 0.82}{2}$ $= 0.87$ pound.

But the mean speed for curve 2 = 198.7 revolutions per minute, and 1 per cent. of this = 1.987 revolutions per minute, and therefore increase of pull of spring for an increase in speed of 1 per cent. = (0.87 × 1.987) = 1.728 pounds.

The distance from the spring center to the center of the trunnion is 2 5 16 inches, while the distance of the center of the pin, which carries and guides the eccentric, from the center of the trunnion is 1 inch; so that, apart from the centrifugal force, a pull of 1 pound on each of the two springs would pull the eccentric over with a force of (2 × 2 5-16 × 1) = 4⅝ pounds. In other words, if the momentary difference between the centrifugal force of each weight and the actual pull of the spring amount to 1 pound it will require a force of 4⅝ pounds, applied

by the eccentric, to balance that difference. Hence, the controlling force of this governor as applied to the eccentric will be $(1.728 \times 4\frac{5}{8}) = 7.992$ pounds

Taking the curve for the medium tension in Fig. 23, a change of speed from 190 to 226 revolutions per minute alters the position of the eccentric by $(1.1 - 0.8) = 0.3$ inch—*i.e.*, a change of 36 revolutions per minute corresponds to a movement of 0.3 inch. Therefore the sensitiveness = 0.016. (In Fig. 22 the sensitiveness = 0.023.) The controlling energy = $(7.99 \times 0.016 \times 4)$ inch pounds = 0.511 inch-pound.

Belliss Shaft Governor.

The governor of this type, Fig. 24, was supposed to run at about 300 revolutions per minute, and to control an engine of 60 horse-power. The brass sleeve S is moved by the levers K K along the shaft P. A lever is fixed onto the sleeve at W, which moves the valve gear. In order to test the governor it was placed between the centers of a lathe and driven by the electric motor. The regulating arrangement was attached as shown in Fig. 25.

Three pairs of curves, Fig. 26, were obtained as follows: Curves 1, 1, with no regulating spring attached to the lever; curves 2 2, with regulating spring attached, but with no tension at starting; curves 3 3 with the regulating spring stretched 1.28 inches (= 34.12 pounds pull) at the start.

The following are details relating to this governor:

Mean strength of governor springs = 5.6 pounds per inch extension.
Mean strength of regulating spring = 26.66 pounds per inch extension.
Weight of throttle valve and vertical gear = 4.75 pounds
Weight of one ball, with arm, &c., = 7.42 pounds.

This governor appeared to be very powerful, and at the same time fairly sensitive. Curves 3 3 give the nearest approach to the actual working curves. The movements of the sleeve S were in this case measured directly, which could easily be done, as the sleeve kept very steady, and the speed of rotation could be regulated exactly. The speed was recorded by a speed counter, driven by the cone pulley of the lathe.

The sleeve is at mid position when about 0.44 inch from its starting point. The loads calculated are zero for curves 1, 1, owing to the fact that no regulating spring is on the governor lever; 17.07 pounds for curves 2, 2 and 37 76 pounds for curves 3 3. These are plotted off above the mid-position line, according to scale, and tracing the two lines shown in Fig. 26 the following results are obtained by the method already described:

	Pounds.
For the curves 1, 1, friction	= 8.8
For the curves 2, 2, friction	= 2.34
For the curves 3, 3, friction	= 2.21

The mean speed of the governor is given as 300 revolutions per minute, and 1 per cent. of this is three revolutions, equivalent to 1.5 horizontal divisions. Hence the controlling force of the governor = 3.89 pounds.

Considering curve 3, which is the nearest approach to the working curve, if the speed is altered from 288 to 305 revolutions per minute the sleeve is moved from 0.1 inch to 0.8 inch; therefore a change in speed of 67 revolutions per minute moves the sleeve 0.7 inch. Therefore the sensitiveness = 0.031. The controlling energy = $(3\ 89 \times 0.031 \times 4) = 0.482$ inch-pound.

Comparison of Different Governors.

The frictional resistance was reduced to a minimum in each governor by well cleaning and oiling the working parts, but even then it varied considerably in amount, as is shown by the forms taken by several of the curves and also by the calculations obtained from them. It will be observed that the Proell governor possessed very little frictional resistance in its working parts as compared with some of the others, and was closely followed in this respect by the Tangye and four-pendulum governors. It should be remembered, however, that the Proell governor had no valve attached, and therefore the frictional resistance of the valve spindle at the stuffing box is an element not included in the experiments. The Pickering governor curves exhibit a frictional resistance much greater than might have been expected, considering that it possesses no pin joints. It is therefore certain that the greater part of the frictional resistance in many governors is produced at the stuffing box of the valve spindle, although in the governors tested this was not screwed tighter than is usual in practice. It is also probable that in a Pickering governor there is a considerable amount of frictional resistance at the points where the lever of the regulating spring presses on the governor valve spindle, and also inside the cap at the top of the governor.

The following table shows the chief results obtained from the nine governors tested:

Results Obtained.

Type of governor	Mean speed revolutions		Sensitiveness.	Controlling force.	Controlling energy.	Approximate mean frictional resistance in lbs. for working curves.
	Per minute.			Inch-lbs.	Lbs.	
Tangye (Soho)		400	0.009	1.54	0.056	2.6
Acme		400	0.016	1.98	0.13	3.22
Lüde (4-pendulum governor)	Load = 0	200	0.056	0.95	0.213	2.62
	Load = 20 lbs.	229.25	0.102	1.96	0.799	1.90
Proell		190	0.35	0.50	0.70	0.71
Watt		90	0.113	4.18	0.189	4.3
Porter		260	0.08	1.04	0.33	2.87
Pickering		400	0.018	0.42	0.03	3.85
Turner-Hartnell (shaft governor)		200	0.016	7 99	0.511	.....
Belliss (shaft governor)		300	0.031	3.89	0.482	2.21

Comparing the values of the controlling force it will be noticed that the small Tangye governor exhibits a high value; it is, however, lacking in sensitiveness. Another notable feature is the large controlling force of the Turner-Hartnell governor and the large amount of frictional resistance in its working parts. It is evident that the controlling force depends largely on the weight of the balls and the central weight or muff of the governor, for the highest values are exhibited by the Lüde, Watt, Porter, Turner-Hartnell and Belliss governors which all had either heavy balls, weights or a heavy central load. As regards sensitiveness, the Proell governor appears to be far superior to the rest. It is striking how favorably the Porter governor compares with some of the more modern types, possessing, as it does, both sensitiveness and great controlling force. The Watt governor also shows large controlling force, due no doubt to its very heavy balls.

Results.

The following may be regarded as a summary of the results arrived at:

1. In testing governors by running them steadily at different speeds great difficulties have to be overcome to obtain the natural characteristics of the governors considered, chiefly owing to frictional resistances, which appear to vary erratically.

2. If the different governors were placed on the engine and tested by suddenly altering the load there would still be uncertainty in the results, owing to the variations of the frictional resistance in the valve gear which is connected with the sleeve (or the eccentric) of the governor.

3. The controlling force of a governor is increased by increasing the weight of the balls or the central load.

4. The controlling force and sensitiveness are increased by providing the governor with powerful springs.

5. Increasing the masses of the revolving balls or weights also increases the amount of frictional resistance.

6. Shaft governors can be made much more powerful, bulk for bulk, than vertical governors.

7. The advantages of using the more modern types of governor over using the older types, such as well designed Watt and Porter governors, are not so great as perhaps might be expected

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Large Car Orders — The orders for new cars, engines and rails reported recently aggregate an enormous sum of money, and the record is a phenomenal one. The number of cars ordered from the American Car & Foundry Company alone, 21,100, nearly equals the totals (all companies) reported for the two months of August and September. Included in the orders are for the New York Central, 4000 coal, 5000 box and 500 flat cars; Pennsylvania, 2000 box and 1500 coal cars; Lehigh Valley, 2750 box, 300 coal cars and 250 gondolas; Reading, 2000 coal cars; Delaware & Hudson, 300 coal cars; New Haven, 500 coal cars; Norfolk & Western, 500 stock and 200 coal cars; Missouri Pacific, 1300 box cars. These cars are all to be delivered by May next, and the same is true of the 12,000 cars recently ordered from the Pressed Steel Car Company. From statements like these some idea can be gained of the present remarkable activity of the car building industry.

The molders' strike in the gray iron foundries of St. Paul, Minn., was ended last week by the employers agreeing to make the minimum day's wages for molders $2.50 and for coremakers $2. The coremakers on piece work are to be given 15 cents an hour. The strike at Moline, Ill., continues, and foundrymen are having their castings made at other points.

Canadian News.

To Develop Corundum Lands.

TORONTO, October 28, 1899.—What is believed to be the richest corundum field in the world lies in the eastern part of Ontario. It is some time since the existence of the mineral there was discovered, but is less than two years since the great extent and character of the deposits were ascertained as the result of explorations and tests instituted by the Ontario Bureau of Mines. When the importance of the lands over which it extended was thus realized the Ontario Government reserved these lands from liability to settlement, and took steps to turn their resources to account. Last autumn the Government called for tenders for the first section of lots in the area, the conditions specified including an undertaking on the part of the successful tenderer to spend stated sums in works for producing corundum. Of the offers made one appears to have been deemed by the Government worth entertaining, and for upward of a year negotiations have been pending with the parties making that offer. At last an agreement has been reached. The parties in question are joined in a syndicate headed by Lloyd Harris of Brantford and B. A. C. Craig of Toronto, with whom are associated, it is alleged, a number of French capitalists. The syndicate are ready to formally organize themselves into a company and proceed to business, as all the necessary money, it is understood, is subscribed. They receive a concession of 2000 acres in the townships of Dungannon, Monteagle, Carlow, Raglan and Brudenell. The concession is made up of 50-acre lots, lying along the York, a tributary of the Madawaska, which river flows along the southern part of Renfrew County into the Ottawa. In addition to paying the annual rentals fixed by the Mines act, the makers of the agreement are under penal bonds to spend $25,000 before September 15, 1900, $50,000 within the next 18 months, and $100,000 within the next three years. Three thousand dollars are to be spent in experiments looking to the production of aluminum from the rock, and a minimum sum of $25,000 is to be spent on a plant for the manufacture of abrasives. The corundum of this deposit occurs, not in feldspar, but in a belt of nephelene rock, and is exceptionally pure. As corundum is alumina, it is believed that aluminum can be obtained from it at a low cost, and that consequently the various commercial aluminates—as aluminate of potash, of soda, &c.—can be produced. Professor Miller of Queen's College has carried on a series of experiments aimed at the production of aluminum from the rock corundum, and has succeeded in producing aluminate of soda in large quantities. He has not made public the details of his process, but it is said to be simple and inexpensive. Several of the beds are found in conjunction with limestone, thus favoring the probability that gems might be met with there. Consequently the eyes of prospectors have been kept open, with the result that some genuine sapphires have been found. Loval Fraser of the firm of G. L. English & Co., dealers in gems, &c., New York, visited the deposits in September and obtained some sapphires which, when cut, proved to be of good quality. George Kuntz of Tiffany's, it is said, after a visit paid to the region some years ago, expressed the opinion that precious stones would be found there. The Government of India is sending an expert to make a report on the deposits. The syndicate have secured also from the Government two valuable water powers. It is estimated that corundum for abrasives can be produced here at $13 to $14 a ton, or less.

Sydney's Prospects.

The Halifax *Chronicle* publishes an interview with Mr. Moxham, president of the Lorrain Steel Company, on the subject of Sydney's prospects as a steel manufacturing center. Mr. Moxham had just returned from Sydney to Halifax, where his yacht awaited him. His words as given by the *Chronicle* are as follows:

"My impression is that it would be difficult to find a place on the continent or anywhere with all the conditions so favorable for the establishment of such an industry as Sydney. I went to Sydney for the express purpose of going thoroughly over the ground where the big works are to be established, and did so in company with experts who came with us from New York, and was fully convinced of this. I do not often grow enthusiastic, but cannot help it when I talk of the possibilities for the future of the steel works at Sydney."

Londonderry Iron Company.

By authority of an order of the court, dated the 10th inst., the estate of the Londonderry Iron Company is to be sold on November 1 under the Winding Up act. The estate includes the following assets: 1, Thirty thousand acres of iron lands near Londonderry, N. S., with blast furnaces, rolling mill, foundries, coke ovens, railways, rolling stock, mines, houses and other buildings, with all plant and machinery; 2, the Chignecto colliery, consisting of a Government lease of a coal area of 4 square miles, and freehold property comprising 2200 acres, with mines, buildings and plant; 3, the cash, outstanding claims, unsold material, stores, goods and all other rights and assets. The liquidator has received a binding offer of $153,000 ($137,000 for items 1 and 2, and $16,000 for item 3); such bid will be made at the auction, and at that, if no higher bid is made, the estate will be sold.

Fort William Iron Project.

The Mattawin Iron Company, in which the Toronto capitalist, Wm. Mackenzie, is supposed to be the leading spirit, is in negotiation with the Town Council of Fort William concerning the establishment of smelting works there. Colonel Hughes, who has represented Mr. Mackenzie in other large schemes, is the man promoting the enterprise. Mr. Mackenzie holds the charter for the Ontario & Rainy River line, whose construction he is now pushing, and owns some valuable iron mines in the Rainy River district. Moreover, he is largely interested in a company who have been formed to put a big fleet of steel freighters on the route between Fort William and the lower lakes. Colonel Hughes has stated that the company he is acting for will spend $1,000,000 in erecting a furnace if the same concessions are granted as the town has bound itself to give another company, who have a specified period in which to take advantage of the offer. John Mackellar is at the head of the other company, whose option has been extended for 90 days. Colonel Hughes states that his company intend to put up three blast furnaces at Fort William.

Iron Mining.

The old Baldwin Mine, at Ironsides, near Ottawa, has been acquired by an American syndicate. It is about eight years since this mine was worked. This, following the purchase of the Haycock Mine in the same vicinity, raises expectations of new activity there. Further south, on the Rideau Canal, large quantities of ore have been discovered. Professor Bain of the School of Practical Science has issued a report as to the character of the deposit. His analysis of seven specimens shows upward of 60 per cent. metallic iron in four of them, and from 28 to 38 in the other three. Back of Kington, near Dog Lake, a deposit which is said to be very promising has just been uncovered.

Trade Items.

An order in Council has been passed by the Dominion Government providing that *bona fide* catalogues and price-lists, not exceeding three to any one address, may be admitted free of duty; but such catalogues must not include almanacs or advertising periodicals or other printed matter designed to advertise the sale of goods by any person in Canada.

Longueuil, near Montreal, is being approached by the Phœnix Bridge & Iron Works Company, and by the Canadian Engine & Locomotive Works of Toronto, to find out what inducements would be offered for the moving of their works to Longueuil.

All manufacturers of iron and steel goods are still extremely busy. A company that are equipping a new pulp mill are greatly delayed by the inability of manufacturers to get their machinery ready. C. A. C. J.

It is claimed that a careful and thorough inquiry into the industrial condition of 255 factories, mills and workshops in the cities of Dayton, Hamilton, Middleton, Piqua, Springfield, Toledo and Lima, Ohio, resulted as follows:

MEN EMPLOYED.

In 1896	50,475
In 1899	84,580
Increase, 34,105.	

MONTHLY WAGES PAID.

In 1896	$2,414,651
In 1899	4,263,491
Increase, $1,848,840.	

These figures indicate that increased wages to the amount of at least $3,500,000 per month are being paid to employees in the mills and factories of Ohio, compared with 1896. The increase per man in Cleveland, $7.76 per month. The increase per man in Miami Valley averages $8.31 per month. The increase per man for the State, about $6 per month. Many places show an increase of 100 per cent. in men employed and 135 per cent. more wages paid.

At a mass meeting of the puddlers held in Pittsburgh on Sunday afternoon, October 29, the chairman was authorized to appoint a committee of five to consult with officials of the Amalgamated Association before the next bi-monthly scale settlement is made. Each lodge was instructed to name a delegate, the delegates to meet and select a committee to be present when the next settlement is made.

Progress of the Paris Exposition.

BY CAPTAIN A. H. MATTOX.

Visitors to the exposition grounds in Paris are astonished at the rapid progress that has been made in the work during the past summer, especially in the construction of the buildings and palaces. On the Champ de Mars and the Invalides new cities have sprung up as if touched by magic. Looking from the Alma Bridge toward Paris the view is most attractive. The two banks of the Seine appear covered with immense skeletons and steel framework alternating with buildings practically finished.

On the right bank, next the bridge, is the immense palace in which over 100 congresses will be held during the exposition. It is in the Louis XVI style, of fine appearance, and will stand out against the foliage of the Cours la Reine, putting a fine and distinguished feature of the end of the eighteenth century into a corner of the exposition which will be filled with constructions of modern style. A little further along, toward Paris, is the Horticultural Palace. This building is the principal motif of this part of the right bank of the Seine and will be the particular charming spot for the weary at the exposition, who will seek rest in flowers and verdure. This palace is composed of three conservatories. Everywhere will be flowers, suspended masses of greenery and dense verdure, and for decorations, simple wooden trellising marvelously designed by famed special artists. From these conservatories, which will be really a superb French garden, a royal staircase, 30 meters wide, will descend to the river, right to the shore of the Seine. Numerous fountains will be arranged in the conservatories, fed with water from the four sources of water supply for Paris, the Seine, the Ourcq, the Vanne and the Arve. All this seen by night, with the electric light effects on the vari-colored glass, with luminous reflections on the river lying at one's feet, will be an enchanting sight.

Palace of Mines and Metallurgy.

One of the most interesting places at the Paris Exposition will be the Palace of Mines and Metallurgy. This palace is situated on the Champ de Mars. It forms the angle of the buildings constructed on the side of the Avenue de la Bourdonnais, at the foot of the Eiffel tower. The facade is stretched along the vacant space left at the axis of the tower, forming a continuation of the Palace of Liberal Arts. A monumental door, surmounted by a dome, occupies the middle of this facade. Lateral towers frame the motif. It is an imposing edifice which will pleasingly round out the general view of the buildings on this side of the Champ de Mars. A monumental porch gives access to a circular hall situated under the dome. This hall opens on a great rectangular nave crowned with a vast electric lantern. The galleries are established as prolongations of those of the Textile Palace. The first story will be reached by three monumental stairways, one facing the main entrance, the others at the sides. This palace will have an area of 16,000 square meters, of which 6000 are on the first floor. The central dome has the form of an immense tiara. A concrete gallery is arranged on the facade situated on the side of the Champ de Mars gardens. The windows are at the level of the wall. The bell tower which will surmount the porch of the entry will receive a chime of 32 bells. The diameter of the big bell will be 1 meter at the mouth and that of the smallest 19 centimeters. The large bell will weigh 850 kg. and the smallest bell hardly 4 kg. The palace will cost about $360,000, and will contain only mining products.

The mine exhibits proper, however, will be arranged at the Trocadero, installed under the gardens. Here will be the illusion of a regular mine in full activity. In these catacombs will be seen the extraction of gold, of silver, of lead, of the diamond and of coal. Here the visitor may watch the complete working of a mine and the exhibit will be continuous. The mine will be reached from the Rue de Magdebourg and the exit made on the territory of the Transvaal, in whose galleries will be seen the reduction of the ore in the form and manner practiced in the Rand country. In these subterranean passages will also be installed the retrospective mining exhibit, showing the working as practiced in the most distant age of the Phœnicians and Romans.

In the Transvaal mining exhibit will be seen the sorting and grinding of ore, also a foundry for gold and a laboratory. In this Transvaal exhibit will be a complete model. The surface workings of famous Transvaal mines will be shown in every detail by a relief model 25 feet long, with buildings, head gear, tailings, &c., carefully modeled and constructed to a scale of 1 in 300. The underground working of a gold mine will be demonstrated by a minutely prepared working model. Nothing will be omitted—shafts, drives, winzes, stones and dikes will be shown, all complete and on a similar scale to that of surface workings. The total depth shown will represent 2500 feet. The model will thus appear at a hight of from 8 to 9 feet. A large scale model of the typical reduction plant, scale 1 in 60, will be put in full working order. The plans were all compiled in Johannesburg, and 200 photographs were taken, comprising surface views in every possible aspect.

The Palace of Mines is now under roof. The outside walls are being glazed, the garden facade is completed, also the wood work for the west facade. All the iron work in the transverse gallery is in place.

The Palace of Civil Engineering.

The Palace of Civil Engineering and Transportation will be one of the handsomest at the exposition. Situated at the right of the "Watercastle" on the west side of the Champ de Mars, it stands between the Palace of Chemical Industries and that of Letters, Sciences and Art Processes. In its construction this palace exemplifies the very best application of iron in construction work. The trusses are entirely new in form. The facade of the palace, consisting of a great central porch flanked by two lateral wings, will bear a colossal colored frieze, done by Andre Allard. The design will recount the history of transportation from the time of the heavy chariot, sliding on tree trunks, of the earliest of earth's inhabitants, to the present day of luxurious electric automobiles and monster locomotives. The frieze is in the Florentine Renaissance style, and the sculptor will tint the figures delicately to give, somewhat, the impression of the famous friezes. Civil engineering will be represented in the decoration by life size figures of workmen of all constructive trades—plumbers, roofers, tinners, &c. In the Palace of Civil Engineering automobiles and bicycles will occupy a surface of more than 77,000 square feet. This palace is entirely roofed and the interior painting has commenced. In the way of metal construction the mounting of the framework of the grand nave of the Grand Palace of the Champs Elysées is about completed. The small Palace of Fine Arts and the Invalides buildings are almost finished.

The Electricity Palace.

At the Electricity Palace great activity is now displayed. This palace is located at the lower end of the Champ de Mars. Being 70 meters in hight, it towers above all other buildings on the Champ de Mars, and with the Chateau d'Eau and the two semicircular ramps this palace will give a marvelous perspective to this avenue. The facade, consisting of nine bays of stained glass and ceramic, will be in hammered zinc. In the daytime, with its glass and sculptured work glistening in the sunshine, this facade will have a splendid effect. In the evening, with its irradiated turrets, its lights and its changing and phosphorescent balustrades, the effect will be fantastically beautiful. A decorative group, representing the "Genius of Electricity," also shedding shafts of many colored lights, like a liquid mass of fire, will complete this wonderful edifice.

The Power Plant.

One of the characteristic features of the 1900 Paris Exposition will be the concentrated motive power plant, which will be on a scale never before attempted. At previous expositions the power machines and motors have been scattered and miscellaneous; but the modern development of the power house has made it desirable that the Exposition of 1900 should contain an example of such a plant. All the power exhibits are therefore to be so disposed as to form a collective, as well as an individual attraction. An interesting feature will be the provision for dealing with the flue gases from the boilers. The steam generators will be collected in two great boiler houses, each with an underground flue which, increasing in size as it extends, will at last discharge itself into one of the two great chimneys which will constitute a striking feature of the buildings. As it was desired that these chimneys should be ornamental as well as useful, their design was thrown open to competition, it being prescribed that the scheme of ornamentation and construction should lend itself to the suitable illumination of the stack. This general lighting up of all the prominent objects on the ground is one of the fundamental points of the general plan. The chimneys are to be 262 feet high, 14.75 feet inside diameter at the top and 20.35 feet at the bottom. A number of suggestions were submitted in this novel competition, the successful designers being Messrs. Nicou and Demarigny. Their work has the merit of retaining the general appearance of a chimney, instead of masquerading as something else. The shaft is left plain, the ornamentation being confined to the top and bottom. At the bottom, the buttresses which reinforce the base are brought out by effects in colored tiles, with an ornate pattern carried above the pedestal

molding. On top, a delicate pattern emphasizes the capital and serves to lighten the effect of the whole. At the top of the chimney there will be a lightning conductor 45 feet in hight. This chimney will be a magnificent piece of architectural work and will cost $40,000. It will be instructive to see what French taste can make of this difficult and prominent kind of structure.

The Steel Contracts.

The metal shops and foundries of France have profited greatly by the Paris Exposition through orders for iron, steel and other metals for the buildings of the Champ de Mars, the Champs Elysées and of the Esplanade des Invalides. An approximate estimate of the weight of steel and iron employed in these buildings and palaces has been given out by Commissioner-General Picard. This statement says that a total of 50,000 tons of steel and iron have been put into the work. This is distributed about as follows: In the Alexander III Bridge, cast steel, 2350 tons, and rolled steel 4750 tons; in various palaces, 38,000 tons of steel and 3000 tons of iron; iron for armed cement, 1600 tons, and iron for foot bridges and various uses 500 tons. Estimating that 1000 tons has been used in the foreign pavilions, the grand total is about 50,000 tons.

The new lines of railroads that have been built and are building in Paris on account of the expected influx of visitors at the exposition will absorb large quantities of steel and iron. The Orleans Railroad in underground work and new terminal stations has used about 16,000 tons of metal. The Western Company in improvements and laying additional tracks have used about 9000 tons of steel and iron. The city of Paris in constructing its first section of the Metropolitan railway system will use 5000 tons. Thus the railway companies of Paris have used or will use 30,000 tons of iron and steel on account of the exposition. The rise in the price of iron and steel has added greatly to the cost of establishing the exposition.

Exhibits at the National Export Exposition.

The John A. Roebling's Sons Company.

The John A. Roebling's Sons Company, Trenton, N. J., have a handsome exhibit in the South Pavilion, a view of which was published last week. A feature of the exhibit which attracts much attention from visitors is the railing, which is of cast iron with a top rail composed of six 1¼ inch cables woven into one solid cable. The display is an open one and is made up almost entirely of samples. Specimens of power cables, telephone cables, rubber insulated wires, rail bonds, office and annunciator wires, magnet wire, lamp cord, wire rope for ship rigging, transmission of power, elevators and hoisting apparatus. At one side of the entrance is a steel billet and on the other side a copper wire bar, representing the bases of the company's productions. Copper rods rolled from copper bars are shown, as being the material from which the different copper wires are drawn. The exhibit has a substantial paneled oak back screen, on which are samples shown in various forms. Lengthwise at the top of the screen is the company's sign, illuminated by a number of incandescent lamps. Above the sign is a large photograph of the famous Brooklyn bridge, which was built under the direction of Col. Washington A. Roebling.

Merchant & Co.,

Philadelphia, have a booth of liberal size, constructed almost entirely of their own products. A decidedly novel feature in the display is the installation of a huge tank at a point above the roof of the booth, from which is discharged water in streams so as to closely resemble a fall of rain. The downfall is continuous and is illuminated by a number of electric lights located at the bottom of the tank. Falling on the roof the water is carried by a gutter to an outlet pipe, which communicates with the main sewer of the exposition. The arrangement is intended to demonstrate the storm proof qualities of the copper tiles with which the roof of the booth is covered, as well as the Star ventilators, which are mounted upon the roof. The ceiling of the booth is beautifully decorated in metal, and the rear of the structure is covered with copper shingles. Metal tiles, tin shingles, Star ventilators, various brands of solder and babbitt metals, seamless brass and copper tubes, tin plates and other materials are seen to advantage within the booth. A neat brass hand rail adds to the appearance of the structure. It is pointed out to visitors that the firm's metal Spanish tiles are to be seen on the buildings at the main entrance to the exposition, also on the hospital building and the buildings in the Chinese village.

Morse, Williams & Co.,

Philadelphia, have a very interesting exhibit covering the different styles of elevators which they build. On account of the large space which would be necessary to show the elevators in commercial sizes models are used, which serve admirably to show the working qualities of the machines. A model of an electric elevator intended for mansions and places where no operator is employed is shown in operation. The elevator is controlled entirely by push buttons, and is designed to comply with all the requirements necessary for convenience and safety. A working model of a direct electric passenger elevator is also shown, as well as a working model of a freight elevator working on the hydraulic pressure tank system. An invalid hoist, full size and operated by hand power, is given prominence in the exhibit. This hoist forms a means of communication between the floor and a platform above the exhibit, and is operated by a slight pull on a rope when ascending, while the descent is made easily by simply releasing the brake. The machinery for a 5 ton electric elevator is shown, also a half turn belt machine for a 1000-pound lift and a belt power machine of 2000 pounds capacity. The Hindley worm and wheel, used in the firm's elevator construction, in steering apparatus and for other purposes, is prominent in the exhibit. Among the sizes and types shown is a 42-inch wheel with worm, by the side of which is a blank wheel and worm of the same size to demonstrate the extent and nature of the cutting on the finished wheel.

The Joseph Dixon Crucible Company,

Jersey City, N. J., have a very handsome exhibit covering their well-known productions. Their display, of which a photograph was shown last week, occupies a space equal to about 250 square feet, located at the corner of a prominent avenue in the main exhibition hall. The exhibit gained considerable prominence in the exposition from the fact that it was almost the first one to be completed and was among the very few in readiness on the opening day. The display is inclosed within an arcade structure of polished cherry wood and the general arrangement reflects much credit upon the taste of the designers. On either side of the principal entrance is a large plumbago retort generally used for smelting silver, zinc and other metals, but now utilized as a vase and holding a pot of beautiful ferns. At each corner of the exhibit are large plumbago bowls and crucibles, also used as receptacles for potted ferns and plants. A glazed showcase of goodly proportions occupies almost the whole of one side of the space and contains a large assortment of lead pencils, office and school sundries. An attraction is presented in the shape of a monster lump of graphite brought from the Ceylon graphite mines and said to be the largest ever mined. It weighs 268 pounds and is displayed on a polished cherry pedestal. A showcase occupies another side of the space and on its shelves are seen a number of large glass jars containing graphite in various shapes and conditions of manufacture from the crude material to the finest product. An assortment of ordinary crucibles, brazing crucibles, boxes, phosphorizers and other articles made from plumbago are disposed in order around the sides of the exhibit. At the rear of the space is another showcase showing graphite materials for all known uses in electrical installation. On top of the case is a line of crucibles in sizes running from jewelers' crucibles to the size known as No. 18. Near the desk of the representative in charge of the exhibit is a No. 225 crucible, which was used by the Ajax Metal Company for 34 heats and which appears to be in very good condition. Near the main entrance is a large glass jar containing a quantity of graphite put up in the various forms popular among dealers in bicycle sundries. At the south front of the exhibit and forming part of the arch is an electrically illuminated sign carrying the name "Dixon's."

The Diamond Drill & Machine Company,

Birdsboro, Pa., show under power a Royal rock crusher having a capacity of 400 tons in ten hours. The machine weighs 30 000 pounds, but may be run by a 1-inch belt. They also show a steam power prospecting diamond drill capable of boring a hole 1200 feet deep and running through sandstone at the rate of a foot per minute, with a core 2¼ inches in diameter, and a hand power drill which is said to drill to 400 feet deep at the rate of 12 inches per hour through sandstone, making a core 1 inch in diameter. A case of stone cores is seen near the drill. A line of belt lacing machines is also shown.

J. H. Williams & Co.,

Brooklyn, N. Y., have a well arranged exhibit of drop forgings. An oak screen bounds their space on three sides and an ornamental wrought iron railing completes the inclosure. The rear portion of the screen is used to display a quantity of drop forged specimens, including golf club heads, wrench parts, hooks and eye bolts. Two large rosettes are composed of numbers of small drop forgings welded together *en masse* and presenting a curious appearance. Each forging, however, retains its individuality and is easily distinguished. The line of Vulcan wrenches made by the concern is represented by a wrench of immense size shown gripping a large iron drum. Bicycle forgings are shown in variety.

Edwin Harrington, Son & Co.,

Philadelphia, are showing a line of machine tools and hoists. A four-spindle multiple drill is in operation, drilling four 1-inch holes at one time without the use of back gears and four 1½-inch holes with the back gears in use. A 60-inch radial drill is under power and is seen to be capable of drilling to the center of 120 inches. The arm moves on ball bearings and is relieved by two sets of roller bearings, one in the front and the other in the back of the column. The spindle is raised and lowered by weight. An extension lathe 28 and 48 inches is shown, also under power, taking work 8 feet between centers when closed and 16 feet when opened out. The tool is driven by a train of cut gears with three changes of speed. Another tool exhibited is a 16 inch lever drill. The machines are all on actual work and are under the supervision of a competent machinist. A casting seen in the lathe was said to weigh 3880 pounds. The hoist department of the concern's works is well represented. A track system has been installed above the exhibit and the working of the hoists is practically demonstrated. Hoists with capacities of 10 000, 6000 and 4000 pounds are shown on the track, among them a new style of spur geared hoist having two load chains and two reversible load wheels. This hoist is claimed to be the most rapid in raising and lowering ever introduced. A patented combined hoist and traveler is seen in general and plain styles, also a patented geared traveler. The track system includes a turntable and switches.

The Chicago Pneumatic Tool Company,

Chicago, Ill., exhibit Boyer and Haeseler pneumatic drills, Hendrickson flue cutters, Whitelaw wood boring machines, Boyer pneumatic chipping, calking and beading tools and riveters, Caskey hydro-pneumatic riveters, Cramp pneumatic rammers Haeseler reversible wood boring machines, Boyer stone carving tools and the Christensen electric driven air compressor. In the latter the motor is on top of the air compressor and operates two single acting air cylinders. All the tools are shown in service.

The American Iron & Steel Mfg. Company,

Lebanon, Pa., have a large and complete exhibit of bolts, nuts and car track materials. A T-shaped structure of oak carries 17 panels and these are used for the display of the productions. The goods in each panel are arranged in pleasing geometric designs. A large pile of bolts ornaments each end of the exhibit. These piles are conical in shape, the bases or first layers formed of bolts 5 inches in diameter and 25 inches long and each succeeding layer made up of bolts smaller in size, the top layer being composed of bolts ¼ inch in diameter.

Lake Iron Ore Matters.

DULUTH, October 29, 1899.—Not a few of the mines are closing shipments for the season, high lake rates having much to do with this. Among them are the Mahoning, on the Mesaba range, which has sent out its proposed quantity of 750,000 tons; the Savoy and the Zenith of the Vermillion, and some of the smaller mines of the Gogebic. Such companies as Federal Steel are pushing ore forward as rapidly as possible and announce their determination to continue till the freeze up. It now appears as if the record for the year among lake mines will be taken by Fayal of this company, which is crowding 1,000,000 tons and will probably close with considerably more than that. Mountain Iron, which was expected to reach a total of 1 200 000 tons, has not much passed 900,000 and can hardly make its total. This is somewhat surprising as it had been supposed that its capacity was unlimited. Such, indeed, is the case, but the mine has been compelled to wait on ships and railway to an annoying extent. Several times during the season this mine has made an output of 12,000 tons a day and has continued this magnificent figure till handling interests have been forced to cry quits. So far as the mine is concerned an output of 12,000 tons a day for the season or double that would be no extreme thing.

It may be remembered that in 1892 the Norrie was credited with an output of about 1,100,000 tons, but that included the Pabst as well as the East Norrie, and the two latter never produced in one year more than 985,000 tons. If the Fayal makes the expected output this season it will have established a record that has not only never been equaled but can with difficulty be taken from it. When the Norrie was making its tremendous output the Fayal was not in existence, and its first shipment was in 1895. The first shovel was not driven into the earth where its shafts now are till the winter of 1894 95. To-day it is one of the most advanced properties of the world, not only in size but in methods, machinery and reserves Its deposits are enormous and it is using three noted methods of mining, all on a very large scale—the underground with large rooms, the milling and the steam shovel. To the close of this season its total output will have been about 2,700,000 tons.

Since the American Mining Company entered the Menominee range they have made a number of moves there, surprising the older concerns by their activity. Besides the Hilltop, whose acquisition has been noted in a previous letter, they have a number of options on which they are starting work. These include the old Kimball mine and six pieces of unopened land, all lying most favorably. The Kimball is in Crystal Falls and has been idle for 12 years. It was once a promising exploration, but the owners were ignorant of mining conditions and when they had sunk out of the shaft they dropped the property. Work is being done for the Republic Iron & Steel Company in the same vicinity at the Merry explorations. The Chicagoan lake property, which furnished some thousands of tons of ore back in 1889, is being taken by the Oliver Company and will be explored. Corrigan, McKinney & Co. have taken Paint River mine, which adjoins their Monitor.

The Marquette range seems to be having a renewal of exploratory activity, and the predictions are that the large unexplored field west of Ishpeming will receive a thorough search soon. There is room there for much ore and favorable indications of mineral. The old time limonites of the range, that have lain undisturbed for so many years that their existence had been forgotten by many, are now being worked and are in demand. From that part of the Marquette called the Cascade range siliceous ores of 40 per cent. are being taken with gladness, and Swanzy ores, not long ago unsalable, are steadily taken and found to be good. Ores of the Crystal Falls district running up to 1 per cent. in phosphorus have been sold already for almost their full production of the coming year. These are not only interesting facts but they are of the highest importance.

Capt Jos Sellwood of Duluth has taken the Rolling Mill mine, Marquette range. It had been practically idle since 1887. He will open from below and explore thoroughly in the hope of finding something better than the 40 per cent. siliceous ores known to exist there. He has also taken several other properties on his own account. The National Steel Company will this winter materially increase the Winthrop's capacity and will install a crusher for making some of its ore marketable. The Oliver Company have bought Goodrich mine, near Ishpeming, which is one of four lying close together that have passed into strong hands and will be active from this time. These are the Goodrich, the Morrow of the Cleveland Cliffs, the East New York and the Dexter, now in the hands of the Minnesota Company. This company have also taken a lot of lands close to Barasa, on the other side from Negaunee, and will explore. Barasa itself is now in a body of ore that fully repays the company for the long and costly exploratory work they have done. Near by the Laughlin explorations at Iron Mountain Lake are showing good promise. At Dexter the water is down so that the mine is beginning to show up well. John Jones of Iron Mountain, a well-known mine opener, is starting extensive explorations at Palmer, Marquette range. Corrigan, McKinney & Co. are credited with having secured the Star West and other Cascade properties, in which ore has been shown. At Hartford, near Negaunee, the Oliver Company are still pushing explorations, and if they take the property will open there the deepest mine of the Marquette. Oliver's Regent mines, formerly the Queen group, are looking remarkably well and will make a large output this season and a much larger another year. A deal is on for the sale of the Princeton, at Swanzy, to one of the large companies. The Negaunee mine has been closed by the destruction of its shaft house by fire. A new shaft has been under way for some time, but sinking is very difficult.

Exploratory options are being taken frequently on the Vermillion range, and this week the Mahoning Company have closed another, being the s. w. quarter of 15, 62—14. Suits have been begun to cancel the lease to the Southall mine, a large magnetic ore deposit between Tower and Ely. The ore runs very high in iron and if any company wanted to pay up the delinquent royalties they might get a good property at a very cheap and favorable lease, for the deal it is now sought to cancel was made a number of years ago. The company got into trouble through the arrest and imprisonment of their head and the lease has been idle since.

A great shovel is being made by the Bucyrus Company for the Rockefeller Company's use another year. It will have a dipper capable of holding 10 tons of ore, filling a car in three dips, and will be strong enough to cope with any of the soft ore deposits of the Mesaba, some of which are very severe on shovels.

The Aragon mine, Commonwealth, Mich., has just installed a system of air haulage underground that does away with the mules formerly employed. One locomotive, built by the H. K. Porter Company and taking air at 700 pounds pressure, is employed. It weighs 7 tons, has 7 x 12 inch cylinders and handles 35 tons of cars and ore. The plant has a capacity for 1000 tons in ten hours and is said to give high satisfaction. It is the first plant of its kind in the lake region. D. E. W.

The Iron Age

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New Blast Furnace Plants.

The enormous pressure which has been put upon the blast furnace capacity during the past six months, and which promises to continue far into 1900, is beginning to give birth to many new enterprises. The rise in the price of pig iron has brought into line dozens of old furnaces which seemed hopelessly out of the race. Money has been and is being spent upon their equipment and repair on which the enterprising men who have taken hold of them expect to recover with a liberal profit in a short time. As a matter of fact, instances have come under our notice in which the sales made for long delivery leave a neat balance if the contracts for raw materials are carried out, and the product is paid for when taken according to agreement. Since probably the majority of these contracts are at figures much below those now prevailing, the future looks very rosy for those who entered upon such undertakings during the summer.

While this revival of old properties was going on another movement, much more significant in the long run, has been proceeding in the iron industry, and that is the preparation for expansion by the large companies in the steel trade. Many of these have found their plants unbalanced, the deficit being at the furnace end. Some of them relied upon the merchant furnaces for the raw material for their steel plants and with the large sums available to them for improvements are now getting ready for the future. In nearly every case the furnaces to be built are on modern lines, of enormous capacity.

Only very few of them, relatively speaking, will play any part at an early date. Among these the most conspicuous are the two great furnaces which the Ohio Steel Company are completing at Youngstown. Jones & Laughlins are completing what is practically a new furnace of 600 tons daily capacity, one of like size having just been started. These are to be followed by a third in July of next year, and by a fourth toward the end of 1900.

The Carnegie Steel Company, Limited, have begun work on two great stacks at Rankin, and two at Duquesne, Pa. The Illinois Steel Company are at work on two large new furnaces at South Chicago, Ill. The National Steel Company are adding one each at their Youngstown, Mingo and New Castle plants, and the National Tube Company are adding one at Benwood, W. Va. The American Steel & Wire Company are working on two new stacks in the Cleveland district. The Sharon Steel Company, a new undertaking, are to build one at Sharon, Pa., and the Republic Iron & Steel Company will add one to the Pioneer plant at Birmingham, Ala. This alone is a list of 19 modern furnaces, whose aggregate capacity cannot be less than 2,600,000 tons per annum.

In the East we may note the building of additional stacks at Port Oram, N. J., and one at Warwick, not counting the new furnace of the Thomas Iron Company, which has just gone into blast. A project to build a new furnace at Birmingham, Ala., has advanced far enough to be worth mentioning, and a charcoal furnace, partly new, is to be built at Buffalo, N. Y.

The plan of building an additional stack at Chicago, to run on foundry iron, seems to be in abeyance for the present, and the same is true of a charcoal furnace at Munissing, Mich. Nor need we count for the present the four or five blast furnaces which the Lackawanna Iron & Steel Company are to erect at Buffalo, or the improvements not yet finally determined upon at other lake ports, and at Pueblo, Col.

Altogether there will be a formidable addition to equipment for the production of pig iron, but it will be observed that only a small number of the plants will become available before July 1, 1900, while the great majority of the new stacks will not be able to turn out pig iron until well into 1901.

What is probably much more likely to tell upon output during the next year will be the improvements which are being made at existing plants. In days like these the furnace manager is very likely to secure appropriations for additional boilers, blowing engines, stoves, &c., when he backs it with the promise of turning out a larger product. A vast amount of work in this direction is now under way.

It will be observed that the great majority of the new plants, and an even greater proportion, so far as capacity is concerned, is to serve the steel trade. The additions of new plant for producing foundry iron are relatively unimportant thus far.

The Shortening of Terms.

The shortening of terms in the iron trade, which was inaugurated by individual establishments, and gradually spread from one to another, is now being made the subject of concerted action. The rapidity with which the movement has grown is quite remarkable. Those who began it had considerable courage, because terms had been decidedly elastic for a long series of years. Pig iron had been sold on four months almost from time immemorial, while finished iron and steel and hardware generally took 60 days with 2 per cent. off for cash in ten days. But these terms were to a great extent merely nominal, as many buyers stretched them considerably, and although efforts were often made by the sellers to tighten the line by charging interest for extra time taken they more frequently winked at the practice and accepted the face of their bills. Those who attempted to be very strict with their trade were likely to lose customers, unless they had a special product, difficult to obtain elsewhere. To inject into such a condition of affairs a demand for payment in 30 days, with no discount for cash, required backbone. It could only be done with any show of success, in fact, with money fairly easy and a heavy demand for all classes of merchandise. The movement, by the way, did not begin, as might be supposed, with any of the great consolidations in the iron trade, but with independent concerns having lively competitors. The consolidations fell in line after a good start had been made.

Organizations are now taking hold of the matter, and are endeavoring by concerted action to shorten terms in some lines in which it would be impracticable for an individual concern to make such a departure. Take the case of stoves, for instance. No stove manufacturer could alone make his terms any shorter than the customary four months. If he did, he would put a formidable weapon in the hands of his competitors with which to fight him. As the great majority of stove manufacturers were strongly in favor of shortening the terms one-half, it has been agreed in recent meetings of local stove associations to make terms 60 days. The action taken does not bind every stove manufacturer, of course,

as few trades are so well organized as to include every concern, but so well is the trade covered that four months' terms are likely to prove the exception henceforth and not the rule. Much interest is manifested in the same direction by wholesale hardware merchants who anticipate favorable action by the National Hardware Association at their approaching convention in Pittsburgh. So confident are they of the recommendation by that association of a change to net cash in 30 days that a considerable section of the trade have already begun to govern themselves accordingly. If such an influential body of merchants should decide that the times are propitious to take such a step as this, their action will doubtless have considerable weight with other trade organizations.

The attempt to get as closely to a cash basis as practicable seems sound and commendable. Long terms of payment are part of the heritage of lack of money, of scanty trade, of severe competition for business, or they belong to the time of imperfect means of communication, when men needed a liberal allowance of days or even weeks in which to answer correspondence. A sound condition of business would require every man in the chain of production and distribution, from the producer of raw material to the final consumer, to transact business strictly with his own capital and not the capital of the one from whom he buys. This, together with present rapid means of communication, would place business on almost a cash basis. As such an ideal condition, however, does not prevail, and is not to be expected, the next best thing to do is to get as close to cash as possible. The business of the country will then be on a far better basis and less liable to be shaken by any sudden financial storm than with credits extended as was the case in 1893.

OBITUARY.

SAMUEL RICHARD SMYTHE.

S. R. Smythe, a well-known metallurgical engineer of Pittsburgh, and president of the S. R. Smythe Company, Incorporated, consulting and constructing engineers, died at the residence of his sister on Frankstown avenue, Pittsburgh, last week. Mr. Smythe was born in England on November 21, 1860. He received a thorough technical training, taking degrees at Owen College and Conway College, North Wales. He came to Pittsburgh about 20 years ago, and has since built some of the largest open hearth steel works and gas producer plants in the United States. Mr. Smythe is survived by a brother, H. E. Smythe, who was a member of the S. R. Smythe Company, Incorporated, and also by one sister.

STEPHEN M. REYNOLDS.

Stephen M. Reynolds died at Avalon, Pa., on October 21, aged 56 years. He had been for many years connected with the Oil Well Supply Company, but was previously employed as assistant manager of the Elba Iron Works, and the Continental Tube Works.

GEORGE ANDREWS.

George Andrews, one of the proprietors of the New York Iron Works, died on October 31, at his home in New York City, aged 66 years. He came to New York from Scotland 40 years ago, and entered the employ of the marine engine works, of which he afterward became part owner.

WILLIAM H. WEBB.

William H. Webb, the veteran New York shipbuilder, who has been called the father of American shipping, died on October 30, aged 83 years. Sixty-two years ago he built the famous packet "Oxford," of the Black Ball Line, which ran between New York and Liverpool. He also built the first large steamer for the New Orleans trade, and the first for the Pacific Mail Steamship Company. In all, he is said to have built more than 150 vessels in his shipyard on the East River. Some years ago Mr. Webb built a home for impecunious shipbuilders and a training school for young shipbuilders on Fordham Heights, New York City, costing $500,000, and which he endowed with the sum of $2,000,000.

The Advantages of Industrial Consolidations.

Ulysses D. Eddy of New York delivered recently before the International Commercial Congress at Philadelphia an address from which we take the following:

Some 30 years ago I left New York for South America, taking with me some 20 tons of samples of American manufactured goods. At that time the South American countries took from the United States principally such merchandise as lumber, flour, some agricultural implements, hatchets and axes and certain classes of wooden ware, but the volume was small. Merchandise was shipped entirely in sailing vessels and the business was a limited one, carried on in an old-fashioned way.

I first reached the city of Buenos Ayres, then a place of perhaps 150 000 inhabitants. In due course I obtained a proper room and opened a sample display. This included a great variety of American hardware, a number of styles of American house furnishing goods, as well as small machines and some agricultural implements and tools. I was there informed that no such goods had ever been exhibited in that city before. In a very short time I succeeded in taking orders for more than $300,000 worth of merchandise, all from responsible firms, who promptly paid for what they bought.

Business Methods To-Day.

It is perhaps interesting to compare the business methods of to-day which are used by firms trading with South America with those of 30 years ago. At that time orders were sent by mail. It was some six weeks before letters containing orders reached the United States. It would frequently take a month or two to accumulate the merchandise called for. Meantime a sailing vessel was chartered, loaded in a leisurely manner and would very possibly take 60 days on the outward voyage. After the arrival of the vessel in the outer roads of Buenos Ayres it was necessary to lighter the cargo for several miles, transfer it in shallow water to high wheeled carts, in which it was transported to the custom house. To receive merchandise from the United States within six months of the date of the order was an extraordinary event—it was more likely nine months.

To-day in all important staple lines the merchandise is offered by the American merchant to the buyer in Buenos Ayres by cable; the price so offered is in sterling money and includes delivery in the harbor there. As a rule, such cable offers are only good for 24 hours. If accepted the merchandise is almost always shipped by steamer. As there are weekly opportunities for such shipments it frequently happens that the merchandise is delivered in Buenos Ayres 40 days after offering it to the buyer. On its arrival the steamer enters a magnificent dock, with every modern facility for unloading, and the merchandise is promptly transferred to the customs warehouses.

While 30 years ago Buenos Ayres was a mediæval city, to-day it is modern, with a population of 800,000. Much of this transformation from the ancient to the modern has been accomplished by Americans and by the utilization of American inventions and productions. American boilers fed with American coal furnish steam to American engines; these drive American dynamos and send electrical current over American copper wires; this current is fed to American trolley cars, which run upon American rails. Americans are laying asphalt pavements there.

Important commercial houses are established and devoted entirely to the extension of trade with the United States. These houses are following the customs of England and Germany in taking young men from the United States and educating them in the necessities of the trade of that region. Retail establishments devoted solely to selling American merchandise are springing up, such as American shoe stores, American bicycle agencies, American typewriter agencies, &c.

While I speak of Buenos Ayres the same conditions will be found in most of the countries of South America, and the same transformation has come about. The increased volume of export trade to South America is not due solely to the effort of American merchants and manufacturers to sell their goods. It is largely due to our improved methods of organization in product and transportation.

Large versus Small Units.

A study of the exports from the United States for recent years will show that their great growth is due to the ability of the larger units to produce, transport and market at cheaper prices than the smaller units doing a like business in other countries. A field in which the increase has been most remarkable of late is that of iron and steel and the various articles made from these materials. The main elements in the cheapening of these products to a point where they are able to compete for the world's trade are, first, the gigantic supply of raw material and the enormous scale upon which it is mined and transported.

The ores of Lake Superior are removed from the earth by the most complicated and elaborate machinery, costing many millions of dollars, at the lowest possible cost. Smaller mines, operating individually, could not possibly raise the ore at any such price. It is transported from the mines to the great lakes over railways specially devoted to that purpose, in cars of most ingenious construction, each one carrying an enormous weight. It is deposited in the steamers of the great lakes at a minimum cost, without being touched by the hand of man. This is only possible by the use of great aggregations of capital and doing the business on a great scale. The steamers carrying it from the shipping ports of the lakes are of immense capacity and carry freight at lower cost than any tonnage in existence. The unloading arrangements at the ports where it is put on shore are marvels of economy, and their capacity to handle vast bulk at minimum cost has never been equaled.

Railways by means of which this ore is transported to furnaces not situated upon the lake borders are in some cases entirely devoted to such transport, and over them are operated cars, each one carrying 50 tons of ore which has never been touched by any human labor; from the moment it was extracted from the mine it has been handled by machinery. This ore is deposited at steel works in which, owing to their enormous capacity, every possible economy of production is made. The finished product is transported over the most efficient and economical railroads in the world from the point of production to the seaboard, and is landed there at prices that enable it to hold its own in the markets of the world. All this is impossible except by operating large units.

The cost of the transportation of grain of all kinds from the farm to the seaboard has been enormously decreased by the improvement of railways, their consolidation, the larger cars in which it is transported and the gradually improved facilities for storing and handling, and the farmer of the country can only look with satisfaction upon the enormous benefits conferred upon him by the consolidation of railway interests and their operation in larger units.

The Influence of Organization.

The export of meat has been rendered possible by the superior facilities given by the operation of large aggregations of capital. The position of the United States as the greatest producer of copper is due not only to the supply of ores but also to the fact that these are worked upon a great scale. The comparatively moderate growth in the exportation of cotton goods is due to the lack of organization in that branch of business, and to the fact that so far there have been few consolidations and the units now organized are not sufficiently large.

The rapidly growing exportation of American locomotives would not be possible except for the enormous plants in existence, insuring rapid delivery and the greatest economy in production. But for the organization called the Standard Oil Company a large share of more than $50,000,000 worth of the products of petroleum exported would go from Russia and other countries rather than from the United States. There are many regions where the crude oil can be procured far more cheaply than in the United States, but by the pipe line transportation, the best known methods of refining and the thorough utilization of all by-products, the producer at the well is able to get a satisfactory price for the raw material and the foreign buyer finds the United States the cheapest place to buy its products ready for consumption. Were the trade not so highly organized and so unified other countries would be making the profits of this commerce instead of ourselves.

Economy of Production.

It will be noted by a study of the export trade of the United States that our exports and manufactures are almost exclusively of articles that can be made by machinery and in which the same article can be reproduced of the same pattern again and again. In order to produce economically and to export against the competition of other manufacturing nations of the world it is necessary to manufacture in larger quantities in order to obtain the economies that are not obtainable except by buying raw materials, transporting them and turning them into merchandise in very large quantities. The small savings made at these various points by the large buyer and the larger seller are sufficient to make a profit.

The evolution in the export trade of manufactured goods from the United States has and will move on the lines of the exportation of goods of large consumption which can be cheaply repeated. The United States cannot expect to excel in the supply of merchandise for the individual. That trade can be properly left to Europe; it involves smaller units of manufacture and more hand labor.

Much criticism has been made of the slow expansion of the export of American cotton goods as compared with the sales made from Manchester. In Manchester it is possible to have 5, 10 or 50 pieces of a certain pattern made up on an order. Their manufacture is so organized that this can be done. In the United States it is impossible, without serious loss, to do business in such a way. With the spread of European and American civilization throughout the world there is gradually coming about a uniformity in the articles called for. There is a tendency to make sizes, lengths, thicknesses, &c., to the same scale or standard. This is more highly developed in the United States than elsewhere, and it is fair to presume that this tendency will be accentuated with the passage of time, for there is no other way by which the consumer can be served so cheaply and can have his labors reduced to a minimum in using such manufactures for the purpose for which they are destined. If this tendency be recognized as existing and growing it speaks for the future advantage of the United States as this is the country in which reduplication has reached its greatest development.

The Reproduction of Types.

In American electrical machinery certain types are produced; these are the results of the best experience of the most accomplished engineers. A plant is equipped with machines of the accredited type, which can be made in large numbers with the greatest economy. In England the engineer designing an electrical plant will generally insist upon modifications of more or less importance. As a result great numbers of patterns have to be made and many changes, which involve a much higher first cost for the manufacturer. The electrical engineer who is constantly designing machinery for the largest users is much more expert and knows better what is the best construction than can any engineer who to-day designs an electrical plant and to morrow a plant of some other branch of manufacture.

The reduplication principle is applied by us from watches to locomotives, and it is also largely applied in our modern fire proof structure. The most scientific dimensions for iron beams and girders, such as are used in our modern buildings are to-day universally accepted in the United States and are gaining acceptance abroad. If the export of American manufactures is to continue to increase in the future as it has in the past it will be necessary still further to perfect our organizations for production and transportation. This can only be done in other fields, as it has been done in the field of railway transportation, by a series of combinations and consolidations. These larger units involve the organization of combinations which are to-day called trusts. Such combinations are condemned as in restraint of trade. Yet if the facts before stated are correct instead of restraining trade they stimulate it.

A friend has called my attention to the fact that every citizen of the United States is a stockholder in the greatest trust. It prepared and issued to the world its prospectus and articles of association in the last century. Its operations directly or indirectly affect the well being of every inhabitant of this continent and its influence is practically world wide. The prospectus is signed by some 55 gentlemen who undertook, as is usual, most of the risks connected with the formation and agreed to devote their energies and fortunes to the enterprise. The prospectus promises to respect the rights of all and to guarantee equality of treatment; yet opportunities arise by which many of the shareholders grow rich while others remain poor. The avowed object of the promoters was clearly and boldly announced in the prospectus to be to avoid obnoxious legislation and competition.

The trust began with about a dozen corporations taken over as going concerns, and has enlarged its operations until it is now composed of nearly 50. Its power extends from the Atlantic to the Pacific, and it is reaching across the oceans for new fields of conquest. The articles of association define the powers of the Board of Directors and of the chairman, and place the whole conduct of affairs in their hands. The shareholders have a vote for director only once in two years, and a vote by proxy for the chairman every four years. The board is not obliged to meet oftener than once a year. The chairman selects the heads of departments and may force their resignation at any time. The members of the board determine their own remuneration and have unlimited power to borrow money and to assess the shareholders.

In spite of setbacks the business of the trust has grown beyond all expectations. Never was it so prosperous, and never have so many people been benefited by it. It is rich, yet it does not hesitate to tax the poor. It is monopolistic and suffers no infringements upon its rights. All the most unpopular features of the industrial trust system are present here, and an anathema launched against these minor trusts, working with small powers in restricted fields, applies with greater force to the prototype of all trusts formed in the year 1776, whose prospectus is called the Declaration of Independence, whose articles of association are known as the Constitution, whose motto is "E pluribus unum" and whose coinage bears the legend "In God we trust."

PERSONAL.

A. M. Shook, vice-president of the Tennessee Coal, Iron & Railroad Company, returned to Ensley, Ala., last week after an absence of a fortnight, due to an accident which caused him to break his leg. The great open hearth steel department of the company will be started at an early date.

Samuel G. Mather of Cleveland has become a director of the Wheeling & Lake Erie Railroad.

C. M. Schwab, president of the Carnegie Steel Company, Pittsburgh, has agreed to present a church building to the Protestant Episcopal congregation, at Braddock, Pa., to cost about $10,000.

Duncan Sinclair, general manager of the Coalbrookdale Iron Company, Limited, of Shropshire, England, is in this country for the purpose of making some purchases of machinery. Mr. Sinclair was in Pittsburgh last week visiting the mills of that district.

W. M. Lewis, formerly with the Ohio Steel Company, Youngstown, Ohio, has been appointed master mechanic of the Colorado Fuel & Iron Company, Pueblo, Col.

A bronze tablet to the memory of the late Thomas R. Morgan, founder of the Morgan Engineering Company, at Alliance, Ohio, was unveiled in the works on Saturday, October 28. A number of addresses were made.

William S. Accles, manager of the branch office for Great Britain of the Niles Tool Works Company of Hamilton, Ohio, has sailed for this country.

Archer Brown of Rogers, Brown & Co., Cincinnati, Ohio, spent a few days at the company's home office during the past week. Mr. Brown was recently elected a member of the Board of Directors of the North American Trust Company of New York.

J. E. Jones, formerly inspector of material in the Pittsburgh district for the Youngstown Works of the National Steel Company, has severed his connection with that concern and accepted a higher position with Wellman-Seaver Engineering Company, Cleveland, Ohio.

P. W. Gates, president of the Gates Iron Works, Chicago, has returned home after an absence of six months in Europe.

Chauncey B. Gross has been appointed manager of the recently organized Gross Foundry & Machine Company, Hillsboro, Ohio.

J. W. Holmes of Paducah, Ky., has succeeded J. K. Dimmick, resigned, as Southern manager of the United States Cast Iron Pipe & Foundry Company.

Henry Tatnall, vice-president of the Girard Trust Company of Philadelphia, has been elected a director of the Diamond State Steel Company.

H. H. Campbell, superintendent of the Pennsylvania Steel Company, returned last week after an absence of several months in Europe.

William Summers, formerly of the Struthers Iron & Steel Company, Struthers, Ohio, and lately connected with the Piqua Rolling Mill Company, Piqua, Ohio, has become superintendent of the Dennison Rolling Mill Company, Dennison, Ohio.

Report has it that Horace W. Lash is to be the general manager of the Lake Superior Steel Company.

Andrew Carnegie sailed from Liverpool for this country on the "Oceanic" on November 1.

Robert M. Thompson, president of the Oxford Copper Company, returned Saturday from a European trip of several months.

Ludwig Loewe and the party of German engineers who accompanied him on his short trip to this country, sailed for Berlin yesterday on the "Kaiser Wilhelm der Grosse." The party spent most of their time in Philadelphia attending the session of the International Commercial Congress.

It is reported that the Postal Telegraph Company placed orders last week for copper wire aggregating 1,000,000 pounds. It is understood that the price was about 19 cents a pound. The wire is to be delivered before the end of the year.

The production of pig iron in France during the first half of 1899 was 1,257,041 metric tons, of which the Department of Meurthe et Moselle produced 784,720 tons. The output in the first six months of 1898 was 1,269,560 tons. The production of finished iron was 419,663 tons, and the output of finished steel 629,219 tons. The output of ingots was 478,190 tons of Bessemer and 293,295 tons of open hearth.

MANUFACTURING.

Iron and Steel.

Reports from Munising, Mich., state that the blast furnace proposed at that point may not be built on account of the high prices named in the bids received for constructing the plant. The promoters consider the investment too heavy.

No. 2 Sheridan furnace of the Sheridan Iron Works Company, Sheridan, Pa., was blown out on the 25th ult., for relining and repairs.

The United States Wire & Nail Company of Pittsburgh have been chartered with a capital stock of $100,000. The directors are as follows: J. N. Denoon, I. C. Denoon, Pittsburgh; E. W. Palmer, Frank Hayes, Cleveland, and Joseph Needham, Shoustown. This new concern will succeed to the business of the Needham Wire Company, manufacturers of wire for all purposes, whose works are located at Shoustown, Pa., on the line of the Pittsburgh & Lake Erie Railroad.

The old Hubbard Rolling Mill, at Hubbard, Ohio, formerly operated by the Mahoning Valley Iron Company, which was taken over by the Republic Iron & Steel Company, is being dismantled and the equipment taken to Youngstown, Ohio.

Chickers Furnace, No. 2, at Lancaster, Pa., has blown in. The plant has been equipped with machinery to make brick from slag.

The Old Sterling Iron Company of Buffalo, N. Y., have been incorporated, with a capital of $80,000, by Mary J. and Faith D. Baird, V. J. Jamison, G. K. Prince and Frank D. Baird.

The Rome Steel Company of Rome, N. Y., have been incorporated, with a capital of $25,000, by J. S. Dyett, M. G. Merritt and A. F. Carpenter.

Machinery.

The Sharon Boiler Company of Sharon, Pa., have bought a site of 5 acres near the works of the Sharon Steel Casting Company, and have broken ground for the erection of a steel and brick building, 140 x 100 feet. The Penn Bridge Company of Beaver Falls, Pa., have the contract.

The Forest City Foundry & Mfg. Company of Cleveland, Ohio, are building a brick addition to their foundry, 100 x 60 feet; they are also adding a storeroom, 100 x 40 feet. Increase in business this season has made this necessary.

The Northern Engineering Works, Detroit, Mich., are putting on the market a line of improved tumbling barrels, both friction and geared type, especially designed for malleable and stove foundry plants.

The William Cramp & Sons' Ship & Engine Building Company of Philadelphia, Pa., will make extensive additions to their already large plant, and have placed the order for the new buildings with the Berlin Iron Bridge Company of East Berlin, Conn. The new machine shop will be 142 feet wide and 350 feet long; three stories in hight. All the floors, including the gallery floors, are to be controlled by electric traveling cranes. The building will be of steel framework, the outside walls of brick, and will be one of the largest and most complete machine shops in the world.

The Climax boilers which the Clonbrock Steam Boiler Company of Brooklyn, N. Y., had at the Trans Mississippi and International Exposition, at Omaha, Neb., in 1898, and the Greater America Exposition, Omaha, Neb., in 1899, have all been sold to the following parties: Council Bluffs Street Railroad Company, Council Bluffs, Iowa, one 500 horse-power and one 250 horse-power boiler; Madison Street Railroad & Electric Light Company, Madison, Iowa, one 250 horse-power boiler. International Packing Company, Omaha, Neb., have purchased for their new plant at Sioux City, Iowa, three 500 horse-power and one 200 horse-power boilers.

Edward J. Etting, Land Title Building, Philadelphia, agent for the Whiting Foundry Equipment Company, Harvey, Ill., reports among recent sales the following sales of Whiting patent cupolas: Davies & Thomas Company, Catasauqua, Pa., one No. 7; McKee, Fuller & Co., Catasauqua, Pa., one No. 9; Stanley G. Flagg & Co., Philadelphia, one No. 4; the A. B. Farquhar Company, Limited, York, Pa., one No. 5; Easton Foundry & Machine Company, Easton, Pa., one No. 6; the American Lamp & Brass Company, Trenton, N. J., one No. 2½; the Lynchburg Plow Company, Lynchburg, Va., one No. 4; McLanahan & Stone, one No. 5. And of Whiting cranes: Williamson Bros., Philadelphia, one three-motor electric traveling crane, 15 tons capacity, span 31 feet; the Logan Mfg. Company, Phœnixville, Pa., one three-motor electric traveling crane, capacity 10 tons, span 40 feet; the Ingersoll-Sergeant Drill Company, Easton, Pa., two traveling cranes, capacity 5000 pounds each, span 25 feet 1 inch; the Richmond Locomotive & Machine Works, Richmond, Va., one three-motor electric traveling crane, capacity 20 tons, span 39 feet 4 inches, one 15-ton three-motor electric traveling crane, span 46 feet, one 5-ton three-motor electric traveling crane, span 46 feet; the York Mfg. Company, one four-motor electric traveling crane, 30 tons capacity, span 37 feet ½ inch; the James River Construction Company, Richmond, Va., one three-motor electric traveling crane, 25 tons capacity, span 46 feet; the A. B. Farquhar Company, Limited, York, Pa., one three-motor electric traveling crane, 20 tons capacity, with 5-ton auxiliary hoist,

span 45 feet 4 inches; the Betts Machine Company, Wilmington, Del., one bracket crane, capacity 2 tons; the Pennsylvania Steel Company, Steelton, Pa., one 10-ton three-motor electric traveling crane, span 30 feet. Of sundry foundry equipment sales have been made to the following: The Valley Iron Works, Williamsport, Pa.; the A. B. Farquhar Company, York, Pa.; Lynchburg Plow Company, Lynchburg, Va.; Lynchburg Hardware Mfg. Company, Lynchburg, Pa.; Ferro-Carbon Castings Company, Frankford, Pa.; Pennsylvania Railroad Company, Altoona, Pa.; the Moore & White Company, Philadelphia; Union Mfg. Company, Boyertown, Pa.; the Betts Machine Company, Wilmington, Del.; the Darling Pump & Mfg. Company, Williamsport, Pa.; Stanley G Flagg & Co., Pottstown, Pa.; Wm. Wharton, Jr., & Co., Incorporated, Philadelphia; the Logan Mfg. Company, Phœnixville, Pa.

Edward J. Etting of Philadelphia has sold Pridmore molding machines to the following parties: F. Gardner Sons, Carlisle, Pa.; Valley Iron Works, Williamsport, Pa.; A. Weiskittel & Son, Baltimore, Md.; Davies & Thomas Company, Catasauqua, Pa.; Pennsylvania Railroad Company, Altoona, Pa.

The Pittsburgh Screw & Bolt Company of Pittsburgh are adding three more six-spindle solid die automatic threading machines, built by Webster & Perks Tool Company of Springfield, Ohio, making an aggregate of 44 spindles of this type in use by the Pittsburgh concern. The Pittsburgh Screw & Bolt Company produces the set and cap screw work for the Westinghouse Air Brake Company, Westinghouse Machine Company and the Westinghouse Electric & Mfg. Company, and they are using this type of threading machines exclusively for this class of work.

The West Side Foundry Company of Troy, N. Y., are largely increasing their capacity and are improving their molding facilities, having added several molding machines. They have also equipped their foundry with trolleys and air hoists so that they are in a better position to make large castings. They are now working on several large Government and State contracts in addition to their regular line of work.

The P. H. & F. M. Roots Company, 109 Liberty street, New York, have been awarded the contract for furnishing the East Jersey Company two 8,000,000-gallon pumps of their positive pressure rotary type, the water to be elevated against a pressure of 130 pounds to the square inch. The pumps are to be operated by two direct connected horizontal Buckeye engines.

The Heine Safety Boiler Company, at Phœnixville, Pa., have begun the erection of several new buildings on the property recently purchased of the Denithorne Bridge Works. One of the new buildings will be 60 x 100 feet, and another 100 x 145 feet. A number of smaller auxiliary buildings will also be erected. These shops will be equipped with modern machinery, and it is expected will enable the company to keep up with the growing demand for the Heine safety boilers.

The Star Drilling Machine Company of Akron, Ohio, have commenced work on three additions to their machine shop and foundry department. They will be 40 x 60, 50 x 80 and 30 x 50 feet. Wm. Greiff of Cleveland has been elected president of the company, H. W. Cole having sold his interest and retired. The capacity of the plant will be enlarged.

The Dietz Machine Tool Company of Cincinnati, Ohio, have been incorporated, with a capital of $125,000, by J. Dietz, W. Lodge, M. Shipley, Jr., F. A. Lamping, L. J. Dolle.

Hardware.

The Union Mfg. Company, New Britain, Conn., are enlarging their plant by the erection of a one-story building, 94 x 117 feet.

Eaton, Cole & Burnham Company, Bridgeport, Conn., are building a large addition to their factory and making improvements in their power plant.

Capewell Horse Nail Company, Hartford, Conn., are now completing an addition to their works, 120 x 60 feet, and have just signed contracts for another addition, 130 x 100 feet, three stories high. Both of these buildings are of brick, built in the most substantial manner, and equipped with all modern improvements and devices for manufacturing which are applicable to the company's product.

The Stewart Iron Works, Cincinnati, Ohio, manufacturers of iron fencing and structural iron and jail work, are erecting a three-story steel structure, 75 x 175 feet, as an addition to their present plant. Their increasing business compels this enlargement. They advise us that they have over $300,000 in orders ahead. Among the large contracts are the new prison of over 400 steel cells at Syracuse, N. Y.; the county jail at Iowa City, Iowa; and jail at Uvalda, Texas. Also those at Mankato, Kan.; Paoli, Ind.; Waukegan, Ill., and other places. The demand for their iron fencing has been better this year than any year in their history, including many foreign orders. Among orders for structural material are those from the Cincinnati, Newport & Covington Railroad for two new steel buildings; court house at Covington, Ky., &c.

D. M. Steward Mfg. Company, Chattanooga, Tenn., are now filling an order for 3,000,000 pencils to go to Bombay, India. They are made in round, square, triangular and octagon shapes. They also have an order for a carload of slate pencils equal to about 2,000,000 pencils. Orders for their patent lava insulators, lava gas tips and gas burners are referred to as large, and the volume of business will be as great as for 1898, which was the largest in their history.

Miscellaneous.

The Hastings Engine & Iron Works, Hastings, Mich., have decided to engage in other lines of manufacture than those in which they have long confined their energy. They propose to make hot air registers, stove pipe ceiling registers and wash sinks for residences. They will remodel their plant and put in additional facilities for handling the new lines. They will build an enameling furnace and add a new brass furnace. They expect that their new line of goods will be on the market by January 1.

The Riter-Conley Mfg. Company of Pittsburgh, builders of iron and steel structures, have been awarded a contract for the erection of four great steel car sheds for the United Railway & Electric Company of Baltimore, to cost about $300,000. The contract includes the erection of steel buildings to be used as car barns, paint shop, repair department and machine shop, and about 3000 tons of structural material will be required. The buildings will be about 125 feet wide, and will vary in length from 200 to 400 feet. The plant will be one of the finest and most complete in the country.

The Columbia Chemical Company, recently organized at Pittsburgh, have decided to locate their works at Barberton, Ohio. All the contracts for the erection of the buildings and their equipment have been awarded. The Riter-Conley Mfg. Company of Pittsburgh have been given a contract for constructing the steel work for the entire plant, which will consist of four large buildings. The main building will be 460 feet long and 120 feet wide, and will be 40 feet high. A building adjoining it will be 200 feet high, and another structure will be 80 feet square and 80 feet high. All the buildings will be of brick, steel and stone, the contract requiring the setting of 10,000 yards of stone and 3,500,000 bricks. The stone will be secured from quarries near the proposed works.

The Sub-Surface Torpedo Boat Company were incorporated last week at Trenton, N. J., with a capital of $1,000,000, to construct submarine torpedo boats. The incorporators are William McAdoo, former Assistant Secretary of the Navy; C. A. Burger, William Barbour, H. T. Toley, Charles D. Halsey and William Williams.

The Ironsides Company of Columbus, Ohio, represent that their business, which is very active, has doubled within the past year. While annoying delays have resulted, they anticipate an early correction through the completion of improvements and extensions that will permit of again doubling their present factory capacity. Of the materials manufactured by this company, which have been of most interest heretofore to the iron mining and producing world, are those for the internal and external treatment of wire and fiber ropes and the lubrication of gearing. The reported adoption of this preservative by rope manufacturers for internal lubrication and sealing, the ordering of ropes specified filled the same, and the indorsements given from a wide field of users, suggests the effectiveness of these materials. Among the more recently adopted articles of manufacture is given a metallic paint of reported superior durability capable of resisting acids and acid fumes and to stand intense heat. An encouraging foreign trade is presenting itself, which promises furtherance through the interest manifested by foreign visitors in their exhibit at the National Export Exposition, Philadelphia. A large and important shipment to the Hawaiian Islands was among recent shipments abroad.

The Rotary Ring Spring Company of Boston, Mass., have been incorporated for the manufacture and sale of spinning or twisting rings, with a capital of $100,000.

The Mutual Mercantile Agency.—The Mutual Mercantile Agency has opened its general offices at 305-309 Broadway, New York, and is opening branch offices in the chief cities of the United States and Canada, the managing director being Erastus Wiman, while the president is Franklin Edson, and the treasurer is Daniel N. Morgan, formerly treasurer of the United States. Among the directors are John H. Flagler of New York, Darwin R. James of New York, George H. Graves, treasurer of the Walworth Mfg. Company of Boston, W. H. Matthai of the National Enameling & Stamping Company, and Charles H. Deere of the Deere Plow Company, Moline, Ill. The capital is $1,000,000 of 7 per cent. preferred stock, and $1,000,000 of common stock, the preferred sharing equally with the common any excess beyond 7 per cent. on the common.

A leading official of the General Electric Company is authority for the statement that the business of the company for the first eight months of the current fiscal year was the largest ever done by them or by any other electrical company in the world. It averaged more than $2,000,000 per month. With the increase to the company's regular business from one share of the Manhattan contract the official in question says that the gross earnings for the year cannot fall short of $25,000,000, or $8,000,000 more than last year.

The Iron and Metal Trades.

Conflicting reports are current relative to the Ore sales for the next season. While it does not appear that large purchases of Bessemer Ores have been made, it is stated that considerable quantities of Non-Bessemer Ores have been placed with Eastern furnaces.

Pittsburgh records further sales of Bessemer Pig, the most important being one lot of 50,000 tons at $23.50, Valley furnace. In Foundry Irons the leading Eastern makers have again advanced prices, but as yet the upward movement does not seem to be quite general. The Southern makers are strong, but values are unchanged. The principal inquiry during the past week has come from a large car building interest, which is credited with purchases of 30,000 tons in the aggregate. A review of the situation indicates that a number of the large melters have not yet fully covered beyond April, so that a buying movement is expected later on.

A good deal of ado has been made over the return of American Foundry Pig from Japan. We understand that the total exports of Pig Iron to Japan were about 17,000 tons, of which some remained unsold. The rise here made it profitable to ship it to the Pacific Coast, the quantity thus sent until now being 1200 tons. It is possible that a few thousand tons more are available and may be reimported.

The Billet situation has not quite cleared up. For prompt delivery high prices still prevail East and West, but for 1900 delivery $35 to $36 is being done, at Pittsburgh. There are some very large orders in the market.

Under the surface some very important movements are going on, and there are indications that an antagonism is developing among large interests which in future may affect some important industries. The effort of the Wire consolidation to become entirely independent of other Steel makers is bringing forward projects to erect Rod mills and Wire plants at Pittsburgh and in the Cleveland district which look as though they had powerful backing.

In Finished Iron and Steel the demand for Car Material is an important factor and a large tonnage is being placed East and West. The Eastern Bar Iron manufacturers have advanced their prices $2 per net ton.

On the other hand, in other lines, some of the rolling mills are finding that their order books for the midwinter are not in a quite satisfactory shape and some of them are hunting for business. An interesting phase is developing, and that is that some consolidations find that by concentrating orders for certain sizes at particularly well adapted mills they are developing a capacity much beyond that of the constituent mills under old management.

In Structural Material there has been a good run of orders. Among the export orders we may note the sale of about 2000 tons for a power house at Glasgow, Scotland, and 1500 tons for a dry dock at Havana. A good deal of tonnage has been placed for industrial buildings. This includes about 2500 tons in New York and about 12,000 tons for two structures in the Central West. The Beam makers are to hold a meeting which may discuss the attitude of the association to the proposed bridge consolidation, which has not yet quite reached its final stage of development.

The event in the metal trade is the drop of Lake Copper to 17c. Rumor has it that a leading producer has sold a large block at that figure, which may be regarded as a surprise from the standpoint of the average buyer.

A Comparison of Prices

At date, one week, one month and one year previous.

Advances Over the Previous Month in Heavy Type. Declines in Italics.

	Nov. 1, 1899.	Oct. 25, 1899.	Oct. 4, 1899.	Nov. 2, 1898.
PIG IRON:				
Foundry Pig, No. 2, Standard, Philadelphia	**$23.25**	$22.75	$22.75	$11.25
Foundry Pig, No. 2, Southern, Cincinnati	20.75	20.75	20.75	9.50
Foundry Pig, No. 2, Local, Chicago	23.00	23.00	23.00	11.00
Bessemer Pig, Pittsburgh	**24.50**	24.50	23.75	10.30
Gray Forge, Pittsburgh	**21.25**	21.00	21.00	9.65
Lake Superior Charcoal, Chicago	**25.50**	25.00	25.00	12.50
BILLETS, RAILS, ETC.:				
Steel Billets, Pittsburgh	**39.50**	39.00	38.50	16.00
Steel Billets, Philadelphia	**42.00**	41.50	40.50	18.50
Steel Billets, Chicago	.....	.....	.....	18.00
Wire Rods, Pittsburgh	.....	.....	46.00	24.00
Steel Rails, Heavy, Eastern Mill	**35.00**	35.00	33.00	19.50
Spikes, Tidewater	**2.65**	2.65	2.60	1.50
Splice Bars, Tidewater	**2.30**	2.25	2.25	1.15
OLD MATERIAL:				
O. Steel Rails, Chicago	**20.50**	20.00	19.00	9.00
O. Steel Rails, Philadelphia	**23.00**	22.50	21.50	11.00
O. Iron Rails, Chicago	**33.00**	30.00	30.00	12.50
O. Iron Rails, Philadelphia	**26.00**	30.00	25.00	13.50
O. Car Wheels, Chicago	20.00	20.00	20.00	11.50
O. Car Wheels, Philadelphia	**22.00**	22.00	20.50	10.00
Heavy Steel Scrap, Chicago	17.00	17.00	18.00	8.75
FINISHED IRON AND STEEL:				
Refined Iron Bars, Philadelphia	**2.20**	2.10	2.10	1.15
Common Iron Bars, Youngstown	2.15	2.15	2.25	1.05
Steel Bars, Tidewater	**2.50**	2.40	2.40	1.15
Steel Bars, Pittsburgh	2.25	2.35	2.50	1.00
Tank Plates, Tidewater	**3.05**	3.00	3.00	1.15
Tank Plates, Pittsburgh	2.60	2.75	2.90	1.10
Beams, Tidewater	2.40	2.40	2.40	1.20
Beams, Pittsburgh	2.25	2.25	2.25	1.10
Angles, Tidewater	2.40	2.40	2.40	1.15
Angles, Pittsburgh	2.25	2.25	2.25	1.05
Skelp, Grooved Iron, Pittsburgh	2.00	2.00	2.25	1.12½
Skelp, Sheared Iron, Pittsburgh	2.40	2.40	2.50	1.20
Sheets, No. 27, Chicago	3.15	3.15	3.15	2.20
Sheets, No. 27, Pittsburgh	3.00	3.05	3.15	2.05
Barb Wire, f.o.b. Pittsburgh	**3.55**	3.55	3.40	1.75
Wire Nails, f.o.b. Pittsburgh	**2.95**	2.95	2.80	1.30
Cut Nails, Mill	2.50	2.50	2.50	1.10
METALS:				
Copper, New York	17.00	17.37½	18.37½	11.00
Spelter, St. Louis	4.75	5.10	5.35	4.10
Lead, New York	4.67½	4.57½	4.60	3.90
Lead, St. Louis	4.52½	4.45	4.50	3.75
Tin, New York	30.50	30.75	32.25	13.85
Antimony, Hallett, New York	9.75	9.75	9.75	7.25
Nickel, New York	36.00	36.00	36.00	35.00
Tin Plate, Domestic, Bessemer, 100 lbs., New York	4.82½	4.82½	4.82½	3.10

Chicago. (*By Telegraph.*)

Office of *The Iron Age*, 805 Fisher Building, CHICAGO, November 1, 1899.

Prices of Iron and Steel have been slightly raised this week by advances in freight rates. The advance thus made on Southern Pig Iron is 20c., while on such varieties of Finished Iron and Steel as come from the Pittsburgh district the advance is 60c. per ton. The heavy demand for cars keeps up and prospects for much more business of this character are excellent. The general demand for almost everything in the line of Finshed Iron and Steel is good, and considerable confidence is expressed in still higher prices. All influences appear to favor higher rather than lower rates.

Pig Iron.—A fair amount of business has been placed for Southern Iron. The inquiry brightened up perceptibly during the latter part of last week. The leading Southern companies assert that prices are too low for existing conditions and feel that they will be obliged shortly to make another advance. Prices of Southern Irons have been marked up 20c. this week on account of the higher freight rates made by the railroads north of the Ohio River. They decided to make the advance 20c. instead of 15c., as at first intimated. Quite a demand is also found for Lake Superior Charcoal, particularly for malleable purposes, which is caused to some extent by the blowing out of the Iroquois Furnace, which had considerable Malleable Bessemer to make. The local furnaces are taking little new business, as their produce is practically sold up far into the future. An unpleasant feature of current business is the increasing shortage of cars. Trouble is reported with deliveries in every direction, but more particularly by Southern furnace companies. We quote for cash as follows:

Lake Superior Charcoal	$25.50 to $26.50
Local Coke Foundry, No. 1	24.00 to 25.00
Local Coke Foundry, No. 2	23.00 to 24.00
Local Coke Foundry, No. 3	22.50 to 23.00
Local Scotch, No. 1	24.00 to 25.00
Ohio Strong Softeners, No. 1	24.50 to 25.00
Southern Silvery, according to Silicon	.... to 26.20
Southern Coke, No. 1	22.85 to 23.85
Southern Coke, No. 2	21.85 to 22.85
Southern Coke, No. 3	21.10 to 21.85
Southern Coke, No. 1 Soft	22.85 to 23.85

Southern Coke, No. 2 Soft	21.85 to	22.85
Foundry Forge	20.80 to	21.35
Gray Forge and Mottled	20.80 to	21.35
Southern Charcoal Softeners, according to Silicon	21.85 to	25.85
Alabama and Georgia Car Wheel	24.85 to	25.85
Malleable Bessemer	.... to	25.00
Standard Bessemer	25.00 to	26.50
Jackson County and Kentucky Silvery, 8 per cent. Silicon	31.80 to	32.50

Bars.—Large orders for Bar Iron are being received by the leading manufacturers, who are now only making deliveries beginning well into next year. These orders are coming from car builders, railroad companies, implement manufacturers and miscellaneous consumers. The condition of trade is such as would seem to warrant a further advance, but manufacturers are conservative. Prices on mill shipments of Common Iron are therefore continued at 2.30c. to 2.40c., Chicago, for future delivery, and up to 2.60c. on prompt shipment. A great deal of business has been placed in Soft Steel Bars, on which mill shipments are now quoted at 2.45c. to 2.65c., Chicago, according to time of delivery, quantity, &c. A meeting of Bar Steel manufacturers will be held at Pittsburgh on Wednesday, November 1, and it is possible that prices may be advanced. Mill shipments of Hoops are still held at 2.65c., base, Chicago, for Bands. The business now being done by jobbers is heavier than ever, with continued difficulty experienced in getting orders for assorted sizes filled. Small lots from stock are quoted at 2.90c., minimum, for Bar Iron; 2.65c. to 3c. for Soft Steel Bars, and 3.65c. to 4c. for Norway and Swedish Iron.

Car Material.—Orders are being placed for thousands of cars, some of which orders are said to be record breakers as to quantity. Car building works are getting filled up and railroad companies that have not placed their orders are likely to have trouble in getting anything like reasonable delivery on business hereafter placed. Railroad companies that have usually built part or all of their own cars are making arrangements to build more than at any previous time, and those always depending on outside car shops are in many cases making arrangements to build for themselves.

Structural Material.—A moderate volume of business is in progress, the demand being confined to small lots. Nothing large is at the moment in sight either in buildings or bridges. The demand for single Beams or small lots for immediate use is urgent. An effort has been made to import Beams from Europe, but prices and deliveries were not satisfactory. Mill shipments are quoted as follows, Chicago delivery: Beams, Channels and Zees, 15-inch and under, and Angles, 3 to 6 inches, 2.40c.; Beams, &c., 18 inches and over, and Angles over 6 inches and under 3 inches, 2.50c.; Tees, 2.45c.; Universal Plates, 3.15c. Stocks of Beams in local yards have practically been exhausted. Smaller sizes than 12-inch Beams are bringing 4c. to 5c. per lb. in small lots.

Plates.—The situation points to little that is new. Local mills are unable to consider business for anything like early delivery, and are in receipt of continued inquiries from buyers at distant points not usually reached from this center of supply. A good demand from stock is reported by jobbers, which is probably somewhat better than usual at this time. A few of the Western mills are stated to be gradually getting into better condition for making deliveries and special prices have therefore been made, which, however, could hardly be duplicated in the ordinary course of trade. A special feature of the Plate trade at present is the disinclination of mills to take orders for Flange and Marine Steel, as they prefer to run on Tank, which is much more profitable. Mill shipments are now quoted as follows, Chicago, for reasonable deliveries: Tank, 3.15c. to 3.25c.; Flange, 3.50c. to 3.60c.; Marine, 3.60c. to 3.75c.; Fire Box 4c. to 5½c. Jobbers quote Tank in small lots at 3.40c., and Flange, 3.65c.

Sheets.—Mill business is quiet. Jobbers are fairly well supplied and it is probable that a better demand may not be felt by manufacturers for some little time. Mill shipments are quoted at 3.15c. to 3.30c., Chicago, for No. 27 Black, and 70 and 10 to 70 and 10 and 5 per cent. for Galvanized. Reports are current, but perhaps not reliable, that an upward movement in Spelter is shortly to be expected, which if it happens will have a decidedly stiffening tendency in Galvanized Sheets. Jobbers report a fair demand for both Black and Galvanized Sheets for shipment from stock. A great deal of 36-inch Galvanized Sheet is now going out, evidently intended for house furnace jackets. Jobbers quote small lots from stock at 3.35c. to 3.45c. for No. 27 Black, and 70 to 70 and 5 per cent. off for Galvanized.

Merchant Steel.—While trade has been somewhat quiet for several weeks inquiries are now getting more numerous and manufacturers generally expect a better business. Prices are very firm. Mill shipments, Chicago delivery, are quoted as follows: Smooth and Finished Machinery Steel, 2.95c. to 3.05c.; Smooth Finished Tire, 2.80c. to 3c.; Open Hearth Spring Steel, 3.60c. to 3.75c., base; Toe Calk, 3.20c. to 3.50c., base; Sleigh Shoe, 2.75c. to 3c.; Cutter Shoes, 3.45c. to 3.65c.; Ordinary Tool Steel, 7c. to 7½c.; Special 13c. and upward. Jobbers are quoting from store: Crucible Spring Steel, 6c. rates; Open Hearth Spring Steel, 5c.; Smooth Machinery Steel, 5½c.; Toe Calk Steel, 4c.

Billets and Rods.—Local manufacturers being still out of the market, nothing has transpired under this head.

Rails and Track Supplies.—It was hardly to be expected that any considerable amount of tonnage would be placed for Standard Sections of Steel Rails after the advance to $35 as minimum. The only transactions reported for the week were in small lots. The aggregate, however, footed up to quite a nice tonnage. Light Rails are in good demand, with round lots quoted at $35 to $42, according to weight. The demand for Track Fastenings is still strong. Quotations are as follows: Steel Fish Plates, 2.50c.; Iron Fish Plates, 2.50c. to 3c.; Spikes, 2.75c. to 2.80c.; Track Bolts, with Hexagon Nuts, 3.80c. to 3.85c.; Square Nuts, 3,65c. to 3.70c.; Steel Links and Pins, 3.25c.; Iron Links and Pins, 3.15c.

Old Material.—One of the largest consumers claims to be absolutely out of the market, which of course causes dealers much difficulty in disposing of material. Some small lots can consequently be picked up for less money than heretofore, but large dealers having storage capacity are accumulating stock and hope eventually to get full prices. Interesting transactions have occurred in Old Iron Rails. One concern bought 10,000 tons of Standard Sections at an average price of between $31.50 and $32, gross ton, f.o.b. cars, Chicago. Another lot of 1000 tons was sold at $33, and another lot of 2000 tons at about the same price. This cleaning up of such large stocks causes holders who still have some on hand to as $33 and more. Dealers' selling quotations are as follows per net ton:

Old Iron Rails	$33.00 to	$33.50
Old Steel Rails, mixed lengths	20.50 to	21.00
Old Steel Rails, long lengths	22.50 to	23.00
Relaying Rails	25.00 to	27.50
Old Car Wheels	20.00 to	20.50
Heavy Melting Steel Scrap	17.00 to	18.00
Mixed Steel	13.50 to	14.00

Following selling prices are per net ton:

No. 1 Railroad Wrought	$24.00 to	$25.00
No. 1 Railroad Track	20.50 to	21.00
Dealers' Forge	18.00 to	19.00
Iron Fish Plates and Angle Bars	25.00 to	26.00
Steel or Mixed Iron and Steel ditto	20.50 to	21.00
No. 1 Cut Mill, for busheling	12.50 to	13.50
Pipe and Flues	13.00 to	13.50
Heavy Cast	15.50 to	16.00
Stove Plate	10.25 to	10.75
Railroad Malleable Cast	.... to	16.50
Agricultural Malleable Cast	.... to	15.00
Iron Car Axles	30.00 to	31.00
Steel Car Axles	23.00 to	23.50
Horseshoes	18.00 to	19.00
Cast Borings	9.50 to	10.00
Steel Car Axle Turnings	12.00 to	12.50
Iron Car Axle Turnings	13.00 to	14.00
Machine Shop Turnings	11.50 to	12.00
Old Boilers, Iron, whole	6.00 to	8.00
Old Boilers, Iron, cut	14.00 to	15.00
Old Boilers, Steel, whole	5.00 to	6.00
Old Boilers, Steel, cut	13.00 to	14.00

Metals.—Copper is lower and carload lots of Lake Superior are selling at 17⅞c., and Western 17⅜c. Pig Lead is very steady and held at 4.55c. Spelter is quoted at 4.95c.

Tin Plate.—The large volume of business still keeps up and jobbers are having the same difficulty in supplying the requirements of their trade. A particularly heavy demand has for some time been noted on sizes suitable for furnace pipes.

Spelter.—In reply to an inquiry about the reported combination of smelters, the Matthiessen & Hegeler Zinc Company of La Salle say they have no information whatever, but are advised that the Miners' Association at Joplin on Monday reduced their schedule price of 60 per cent. Ore $3 per ton.

A. C. Hawes, managers of the Chicago office of Matthew Addy & Co., has gone to New Mexico to stay about six months. He expects to resume his official connection with the firm on his return to Chicago. His numerous friends hope that his sojourn in the South may have a decidedly beneficial effect upon his health, which for some time has been quite delicate. Chas. L. Miner will take care of the business during his absence.

Frank C. Roberts & Co. of Philadelphia, Pa., have been appointed the engineers for the building of the new 100-foot furnace of the Warwick Iron & Steel Company at Pottstown, Pa., and for the new Wharton furnace at Port Oram, N. J.

Philadelphia.

Office of *The Iron Age*, Forrest Building, PHILADELPHIA, PA., October 31, 1899.

The market for Iron and Steel is tending toward a point which is likely to be of considerable interest in the near future. What the ultimate developments will be is beyond any man's foresight, as two sides have to be taken into consideration, and at that they are pretty evenly balanced. If the situation is to be measured by immediate conditions the chances would be for strong and probably still higher prices, but by looking a little further ahead the feeling in this respect would be somewhat modified. The most prominent feature at the present time, however, is the continued scarcity of material, especially Pig Iron, Billets, Plates, Shapes and Bars. Pig Iron, Bars and Shapes are higher than they were a week ago; Plates and Billets firm and in good demand, but not dearer. Intimations are thrown out that there is a gradual easing up as regards purchases for long delivery, and in some lines this is probably true. Furthermore, there is a gradual increase in production and new candidates for business are now very close at hand. The Danville Bessemer Company are sellers of Steel, the Tidewater are or soon will be sellers, and early in the new year the Diamond Steel Company expect to be turning out 300 to 500 tons per day. This no doubt will be inimical to some of the Western mills, which have had all their own way in this vicinity for months past, and is liable to provoke keen rivalry, especially if there is any prospect of surplus output. Prices are high enough to permit of a considerable shrinkage in case of a contest, and while the demand for Steel in the West is likely to be very large, Western mills may not feel disposed to lose any portion of their Eastern trade without a severe fight. This view of the market is already causing some hesitancy and will probably continue to do so until the outlook becomes more settled. It does not necessarily follow that prices are going to be lower because of increased local supplies, but, as we said before, consumers want to see a little further ahead before they place large orders. As an offset to this may be cited the certainty of a heavy demand for railway equipments, for ship building, bridge building, and, in fact, for all purposes, and on a scale which promises to exceed even that of the present year. Besides this, the cost of production will be such that the margin for a decline from to-day's prices —except in one or two articles—is not large, so that, taking everything into account, the chances for appreciably lower prices are not overpoweringly strong. Pig Iron looks like going higher, but there is room for readjustment in some of the specialties, so that lower prices in certain lines may be met with without affecting the general list.

Pig Iron.—A very strong feeling has developed during the past few days. Sales have been made at 25c. to 50c. per ton more money than has been paid until now, and it looks as though still higher figures would rule in the near future. Sales have been made of large lots at figures equal to $25 for No. 1 X Foundry, $23.50 for No. 2 X Foundry, $22.50 for No. 2 Plain and $20.50 for Gray Forge, seaboard or equivalent points. In one or two cases still higher figures have been realized, but the quotations just named are now pretty general, and it is only in isolated cases that less money is accepted. The Eastern demand, while very satisfactory, is not in proportion to that in other sections, which is evidenced by large sales for New England points and to the West and Northwest. Pittsburgh and vicinity is taking a good deal of Basic and Mill Iron, while points such as Chicago and the Northwest, as well as New England, are taking Foundry grade in considerable quantities. It should be understood that shipments to the West are mostly from Virginia furnaces and those west of Harrisburg, all of which are usually large sellers in this territory. It is curious to notice that reports from these outside districts are somewhat less favorable, while at the same time they are taking more Iron and at higher prices than they have ever done before. It is difficult to explain these anomalies, but so far as this market is concerned all the indications at this writing point to strong and advancing prices. The range of prices may be given as follows for Philadelphia and its equivalent: No. 1 X Foundry, $24.50 to $25.25; No. 2 X Foundry, $23 to $23.50; No. 2 Plain, $22 to $22.50; Standard Mill Iron, $20 to $20.50; Basic, $23.25 to $23.50; Bessemer, nominal, $25 to $26; Low Phosphorus, $27.50 to $28.

Muck Bars.—There is little or no demand, although sellers are asking for bids at about $31.50, f.o.b. cars at their mills. The dullness is attributed to the withdrawal of orders by the Wrought Iron Pipe consolidation, with the intention of establishing a lower range of prices. They are consuming very heavily, however, and if makers of Muck Bars stand firm it is believed that new purchases will be a necessity in the near future and prices work back to the level they occupied two or three weeks ago. In the meantime, however, there is practically nothing doing.

Billets.—It is believed that the time is approaching when the deadlock will have to be broken. At present Steel is scarce, and the best that can be done is about $42 for this year's deliveries and $41 for the earlier months of next year. Consumers of Steel are not much inclined to place orders for long deliveries at the prices named, and as a considerable amount of Steel will be available from local mills in course of two or three months there is less disposition to buy than there would be under ordinary circumstances. There is an impression that there will be a pretty sharp contest for local trade in the near future, and, while consumption is sure to be large, it is not likely that the Western mills will market as much Steel in the East next year as they have done this year. Pending some developments along the lines indicated buyers are disposed to maintain a very conservative position.

Plates.—There is no change in this department. During the past week or ten days there was a period of comparative dullness, but there was plenty of business on hand, and inquiries are again coming in for large lots with very satisfactory sales at full quoted rates. Prospects are, therefore, favorable for a continued good demand, and without much changes from the prices now ruling, which are as follows for deliveries at seaboard or nearby points: Steel Plates, ¼-inch and thicker, 3.10c. to 3.15c.; Shell, 3.25c. to 3.30c.; Flange, 3.40c.; Fire Box, 3.50c.; Charcoal Iron Plates, C. H. No. 1, 3.15c.; Best Flange, 3.65c.; Fire Box, 4.15c.

Structural Material.—The demand is fully maintained and buyers are still struggling to get deliveries. There is an immense amount of back orders to be filled, so that the pressure on the mills is not likely to be abated for a long time to come. New business is also on a large scale and can only be placed by paying a considerable premium on official quotations, which are about as follows for nearby deliveries: Beams and Channels, 15 inches and under, 2.40c.; Angles, 3 to 6 inches, 2.40c.; Zee Bars, 2.40c., f.o.b. Philadelphia; Angle Bulbs and Deck Beams, 2.63c.; Tees, 2.45c.

Bars.—At a meeting of the Eastern Bar Iron Association, held here last Friday, an all around advance of 1-10c. per lb. was unanimously agreed upon. This was mainly due to the extraordinary advance in the prices of material, which was absorbing a large portion of the margin which is necessary on a market such as we are now having. The demand for Bars, however, continues without abatement and large lots are taken by buyers from all points of the compass. The new rates are 2.10c., at mill, for Common Iron, 2.20c. for Best Refined and 2.30c. for Test Iron, but higher prices are paid for deliveries guaranteed within certain specified dates; Steel Bars, 2.60c. to 2.75c.

Sheets.—The market is a little slow compared with what it was some time ago, but mills are running full and have about all the business they can attend to. Prices steady and unchanged as follows for best makes (Common Sheets two-tenths less): No. 10, 3.15c. to 3.20c.; No. 14, 3.30c.; No. 16, 3.40c.; Nos. 18-20, 3.50c.; Nos. 21-24, 3.60c.; Nos. 26, 27, 3.70c.; No. 28, 3.75c. to 3.85.

Old Material.—The market contines to be in a very erratic condition and extraordinary prices have been paid for special classes of material. Consumers are inclined to withdraw their bids, but if some adopt that course others step in and take whatever is offered, so that up to this date prices are held at the top notch. The situation is a little uncertain, nevertheless, as prices are considered to be out of proportion to the general market. Sales have been made within the following limits for deliveries in buyers' yards here or at nearby points: Cast Borings, $13.75 to $14.25; Wrought Turnings, $14.75 to $15.25; Machinery Cast, $17.50 to $18; Old Car Wheels, $22 to $24; Heavy Steel Scrap, $21 to $22.50; Steel Rails, $23 to $24; Iron Rails, $26 to $28; Choice Yard Scrap, $21 to $22; No. 1 Railway Scrap, $26 to $28; Iron Axles, $30 to $32; Steel Axles, $30 to $32.

G. W. Nicolls, lately of the firm of Nicolls, Wheeler & Co., has associated himself with Pilling & Crane of this city and will take charge of their Iron and Steel Scrap department.

According to the official report of the Imperial Insurance Bureau, there has been a great increase in the number of accidents among workingmen in Germany in the past few years. In 1894 there were 69,619 accidents; in 1895, 74,794 accidents; in 1896, 86,520 accidents, and in 1897, 92,326 accidents; so that these years show an increase of 25 per cent., although the increase in the number of persons assured was but 0.17 per cent.

Cleveland.

CLEVELAND, October 31, 1899.

Iron Ore.—The prices at which Ore is to be sold for next season's delivery continue to be a most important topic of discussion in trade circles. It was thought for a time that the middle of November would see the market fairly open, but this now seems doubtful in view of a manifest effort on the part of a majority of the sales agents to put off negotiations until December, or, in other words, until the whole movement of the present season's product down the lakes has been concluded. There is a practical certainty that when the market does open almost the total available supply will be covered in a very few days. The influences that are working for conservatism in the establishment of a scale of prices are manifestly earnest in the effort, but every indication points to an advance of from $2 to $2.25, and possibly more, over last season's prices. In passing it may be noted that sales of Ore have recently been made at the following prices: Bessemer Specular and Magnetic, $6.25; Non-Bessemer Specular and Magnetic, $5; Bessemer Red Hematite, $5.25; Non-Bessemer Red Hematite, $4.75. Interest in the transportation situation for next season has in a great measure abated, due largely to the fact that the entire market has been virtually closed. Looking back on the transactions of the past few weeks in the aggregate, however, the chartering for next season represents a magnitude which has surprised even the well informed Ore men. Lake vessels capable of moving 17,798,000 gross tons of Iron Ore have been chartered for the season of 1900 at the rates given in *The Iron Age* during the past two weeks. Of this total 11,375,000 gross tons represents the capacity in the hands of the Ore companies and 6,423,000 tons constitutes the contracts with individual vessel owners. The Rockefeller representatives have control either through charter or through the ownership of vessels of 6,300,000 tons of carrying capacity. Other principal interests control carrying capacity as follows: Carnegie Steel Company, 1,350,000 tons; American Steel & Wire Company, 1,000,000 tons; Corrigan, McKinney & Co., 250,000 tons; Pickands, Mather & Co., 2,000,000 tons; M. A. Hanna & Co., 1,000,000 tons; H. H. Brown & Co., 600,000 tons; Republic Iron Company, 240,000 tons; Cleveland-Cliffs Iron Company, 550,000 tons. The fleet of the American Steel & Wire Company will be engaged this year largely in carrying Ore for the Carnegie Steel Company and the American Steel & Wire Company, but it is expected that by another year the American Steel & Wire Company's mines will be so developed as to require the services of the fleet. The Iron Ore freight market for the remainder of the present season appears in rather an unsteady condition, the result largely of a slump in the rates for carrying grain. The rates last quoted, $1.75 from the head of the lakes, $1.60 from Marquette and $1.35 from Escanaba, still hold, but the market is considerably less firm than it was a week ago and would not stand much pressure. This and the fact that many boats which have been on contracts will soon be thrown on the market has prevented shippers from chartering tonnage very far ahead.

Pig Iron.—The whole market has undergone a very material stiffening during the past week and prices on all grades have not only been advanced, but the advance to all appearances is well taken. In certain grades, notably Bessemer, this betterment of prices has been induced to a considerable extent by the heavy sales of Rails and Bars, but in the case of other grades it is necessary to look in some other direction for the influence. The great scarcity of cars still continues to present a very serious problem to furnacemen, and additional portent is given to this by reason of the fact that very little relief may be looked for during the remainder of the season of navigation. No sales of Bessemer have been reported since the 60,000-ton transaction reported last week. Some idea of the change in the situation may be gained, however, when it is stated that, whereas the sale mentioned covered the entire first half of the year at a price of $23, Bessemer is now strong at $23.50 for the second quarter, while even that figure would in all probability not be accepted for Iron for first quarter delivery. The Bessemer Furnacemen's Association has received some additional inquiries for Iron, but sales may be made without another meeting being held. The sales of Rails and cars are, of course, directly responsible for an advance of $1 per ton in the price of Lake Superior Charcoal. The local office of the Carnegie Steel Company has had some inquiries for Low Phosphorus Pig, but are unable to make any of it. The past week has seen an advance of 50c. per ton in Foundry grades, Foundry No. 1 being now quoted at $23.50 and Foundry No. 2 at $23, in the Valley. Some sales have been made at these figures covering the first half of next year. Consumers are, however, pretty well supplied for the first quarter. Occasional seekers for Foundry grades for delivery during November and December of this year still appear in the market. Speculators who have been awaiting such opportunities and now ask fancy prices above the $24 mark are not likely, however, to reap the benefit they expected, for the reason that many firms have shown a willingness to supply their customers at the rates prevailing for next season's delivery, and several small transactions on this basis have been reported within the past few days. Forge Iron shows proportionate increases in price. Reports from furnaces indicate that in most instances there is an improvement in the Coke supply situation.

Finished Material.—The activity of the market inaugurated in almost all lines more than a week ago still continues. During the week sales of about 2500 tons of Structural Material for use in local building operations have been made. Delivery is promised during the first five months of the new year. No sales of Rails of any magnitude have been made since the recent advance, but evidence is not lacking that the latter is well taken. The inquiry for Plate of all kinds is excellent. This is particularly true in the case of Boiler Plate for use by manufacturers of agricultural implements. Some business has been done covering the first quarter at prevailing prices. A sale has also been made of about 200 tons of Rivet Rounds, the price obtained being 2.60c., Cleveland. Sales have been fairly active in almost all grades for next year's delivery, but purchasers are buying short; there is no tendency toward speculation. The sales have also been less extensive in Bars than in Soft Steel and Structural Material. Pipe and Sheets continue very firm at the quotations last made.

Old Material.—An active market, with both supply and demand keeping well up to the point desired by dealers, have been characteristics of the situation during the past week. The movement has been exceptionally even, all grades being in demand to about the same extent. Sales have been made at the following prices: No. 1 Cast, $18, net; No. 1 Wrought, $25, net; Steel Melting Stock, $21, gross; Car Wheels, $23, gross; Iron Rails, $35; Turnings, $14.25, net, and Borings, $13, net.

(By Telegraph.)

CLEVELAND, OHIO, November 1, 1899.—Furnacemen are manifestly getting anxious, and this combined with the fact that there is no particular cause for delay, is likely to result in an opening of the Ore sales market within a few days. A considerable sale of Ore was made this week at an advance of 66 per cent. over last year's price, but this is not Ore which will come into competition with the majority of high grade Lake Superior Ores. The general feeling now is that Ore prices will be 80, 90, or even 100 per cent. in excess of those of last year.

Thomas Wilson of Cleveland has purchased a Steel steamer building at Jenks' Yard, at Port Huron, and has given that firm a contract for a new vessel to come out next season, and which will have a capacity of 6000 tons of Ore. No more boats can now be contracted for 1900 delivery on the lakes. Several furnaces announce that they have some Pig Iron for November and December, but they manifest no anxiety to sell, and claim to be holding out for $24 on No. 2 Foundry.

Cincinnati. *(By Telegraph.)*

Office of *The Iron Age*, Fifth and Main streets,
CINCINNATI, November 1, 1899.

Quietness still continues to be the order of the day in Pig Iron circles. That is so far as new business is concerned. Still there is no grumbling on this account, and selling interests seem rather glad of the continued business of the market. There have been a few sales of lots of 1000 tons and over, the chief one being lots aggregating 6000 tons for St. Louis delivery. Northern Iron has been slightly the more active end of the market. Quite a lot of the buyers are asking for the prices, but the understanding is that these are, as a rule, simply throwing out feelers for the purpose of sounding the situation. A quiet time is the general expectation for the next month, but it will be a great surprise if December does not bring some heavy trading. Some large buyers are known to have as yet bought almost no Iron for delivery after January 1. That these will have trouble in securing what they will need for early delivery is almost a foregone conclusion. The price-list is practically unchanged. Some Iron can still be picked up at 25c. less than quotations, and some few sellers are asking about the same sized advances. It is said that some Gray Forge was put in on the St. Louis trade men-

tioned on the basis of $15.75, Birmingham, and some No. 3 Foundry as low as $16.20. On the whole, however, the situation is strong and prices unchanged. We quote, f.o.b. Cincinnati:

Southern Coke, No. 1	$21.75
Southern Coke, No. 2	20.75
Southern Coke, No. 3	19.75
Southern Coke, No. 4	19.50
Southern Coke, No. 1 Soft	21.75
Southern Coke, No. 2 Soft	20.75
Southern Coke, Gray Forge	$19.25 to 19.50
Southern Coke, Mottled	19.25 to 19.50
Ohio Silvery, No. 1	30.00
Ohio Silvery, No. 2	29.00
Lake Superior Coke, No. 1	$23.50 to 24.00
Lake Superior Coke, No. 2	22.50 to 23.00
Car Wheel and Malleable Irons.	
Standard Southern Car Wheel, Chilling Grades.	$24.75
Standard Southern Car Wheel, No. 2	23.75
Lake Euperior Car Wheel and Malleable	25.00

Plates and Bars.—No change to be noted in prices. The market continues strong and very active. We quote, f.o.b. Cincinnati: Iron Bars, carload lots, 2.25c., with half extras; small lots, 2.60c., with full extras; Bar Steel, in car lots, 2.50c., with half extras; small lots, 2.95c., with full extras; Iron Bar Angles, 1½ x 3-16 inch and larger, in car lots, 2.65c.; small lots, 2.80c.; Sheets, No. 10, 3.15c.; No. 27, Stove Pipe, 3.25c.; No. 27, Steel, 3.35c.; Plates, 3c. to 3.10c.

Old Material.—With the exception that Car Wheels are stronger, there is no change to quote. Business continues active. We quote, f.o.b. Cincinnati: No. 1 Wrought Railroad Scrap, $21 to $22 per net ton; Cast Scrap, $15.50 to $16 per gross ton; Axles, $26 to $27 per net ton; Iron Rails, $28 to $29 per gross ton; Car Wheels, $20 to $21 per gross ton.

Pittsburgh.

Office of *The Iron Age*, Hamilton Building, }
PITTSBURGH, November 1, 1899. }

(*By Telegraph.*)

Pig Iron.— The principal sale of the week has been a block of 50,000 tons of Bessemer Pig to a consuming interest for first half of next year, at $23.50, Valley furnace. The market on Bessemer Iron for the first six months is strong at $23.50, while for November and December it is higher. Small lots of Bessemer Iron for prompt shipment have sold at $24.50 to $25, Pittsburgh. There is a good demand for Gray Forge, and it is strong at $20.50 to $20.75, Valley furnace. Foundry Iron has been somewhat quiet, but now that the molders' strike is settled it is probable that it will improve. We quote Bessemer Pig at $23.50; Gray Forge, $20.50 to $20.75, both at Valley furnace; No. 2 Foundry, $23 to $23.25; Gray Forge, $21.25 to $21.50; Bessemer, $24.25 for the first six months and $24.50 to $25 for November and December shipment. In addition to the sale of 50,000 tons noted above, we can report a sale of 5000 tons of Bessemer Pig for the second quarter at $23.50, Valley furnace, also a sale of 4000 tons of Gray Forge at $20.35, Valley furnace, and one of 1000 tons at $20.50, Valley furnace.

Billets.— The Steel market is strong, and small lots of Billets for spot shipment bring $39.50 to $40, Pittsburgh. Steel for next year is lower, and from $35 to $37 is being quoted. Leading Steel makers have been in conference recently for the purpose of fixing a price on Billets for next year. It is reported that about 175,000 tons for the first half have already been sold.

Sheet Bars.— The market is unchanged. There is no difficulty in getting Bars, and prices are from $36 to $37, Pittsburgh. We note a sale of 3000 tons for the first half on the basis of $36.35, Pittsburgh.

Iron and Steel Scrap. — The market is very strong, and prices continue high. Old Iron Rails are bringing from $30 to $32; Steel Rails, mixed lengths, are $20 to $20.50; Short Pieces, $22 to $23; No. 1 Wrought Scrap is higher, and is quoteu at $22 to $23, net ton.

Spelter. — The market is weak, and we quote prime Western grades at 5.10c., Pittsburgh.

(*By Mail.*)

The Iron market is stronger to-day than it was two weeks ago by reason of the heavy sales of Pig Iron, Rails and Billets that have been made at very high prices. It is weaker from the standpoint that many of the mills are rapidly getting rid of old contracts at low prices and find difficulty in getting new business at present prices to keep filled up. Buyers hesitate to place contracts for material for next year at present prices and some of the finishing mills are getting short of work. It is claimed that with the tonnage that will be carried over from this year, together with new orders, close to 1,800,000 tons of Rails have been sold for next year at the reported price of $33, at mill. Engagements for Bessemer Pig Iron for first half are large, and about 160,000 tons of Billets have also been sold for first half. Bessemer Pig Iron has also sold for second and third quarter at about $23.50, Valley, so that from the standpoint of raw material the market is strong. In addition, some large contracts for Coke for second half have been closed in the last few days, and at very good prices. In Finished Material the market is reasonably strong, being weak only on a few lines. Every day that goes by the mills are nearer cleaned up on old contracts, and whether enough tonnage will come in at present high prices to give steady work has not yet been determined. It is a fact that a good deal of material for next year has been placed at prices very much lower than could be done for remaining two months of this year. Contracts for some Iron and Steel buildings have been placed at very much lower figures, work to commence in spring, than could have been done if contract required work to commence right away.

Ferromanganese.— There is not much inquiry, but the market is strong. We quote at $100 for large lots, delivered.

Structural Material.—A good deal of tonnage has recently been placed, much of it coming to local mills. Car sheds at Baltimors and chemical works at Barberton, Ohio, both requiring about 6000 tons, have been given to a local mill. Some orders for export have also been placed. A meeting of the Beam pool is to be held this week and an advance in prices may be made. We quote: Beams and Channels, 15-inch and under, 2.25c.; 18, 20 and 24 inch, 2.35c.; Angles, 3-inch and up to 6 x 6, 2.25c.; Angles, under 3-inch, 2.50c.; Tees, 3-inch and larger, 2.30c.; under 3-inch, 2.50c.; Zees, 3-inch and larger, 2.25c.; Grooved Rolled Plates, 2.75c., Pittsburgh.

Plates.— There is a very wide range in prices being quoted on Plates by different mills. Some sellers, that have their product under contract well into first half of next year, are still asking all the way from 2.75c. to 3c., at mill. Other mills that have very little tonnage on their books are quoting as low as 2.60c. and up to 2.75c. for this year. It is understood that for next year Tank Plate has sold at about 2.50c., at mill. We quote Tank, ¼-inch and heavier, 2.60c. to 2.75c., the lower price being for narrow sizes; Shell, 2.75c. to 2.85c.; Flange, 2.85c. to 2.90c.; Marine, 2.90c. to 3c.; Fire Box, 3.25c. to 4c., depending on quality, all f.o.b. at maker's mill. It should be noted that the lower price on Tank Plate is being made only by a few mills.

Rails.— It is claimed that Rail mills, with old contracts and the large tonnage recently entered, have sold close to 1,800,000 tons of Rails for next year at the reported price of $33, at mill. The quotation now is $35, at mill.

Sheets.— The market is about as noted last week. The Sheet combination will not go through, the options expiring at midnight, October 31. Some mills are extremely anxious to enter business for next year and are naming much lower prices than other mills will accept. We quote No. 27 Black Sheets, box annealed, one pass through cold rolls, 3c. to 3.05c.; No. 28, 3.10c. to 3.15c. We quote Galvanized Sheets at 70, 10 and 5 per cent., 15c. freight allowance, and are advised that some mills for desirable orders are shading this price.

Bars.—There is a very wide range in prices on Iron and Steel Bars quoted by different mills. Some sellers ask 2.75c. for Steel Bars and others quote as low as 2.25c. The market is all the way from 2.25c. to 2.50c. The same is largely true of Iron Bars, some mills naming very much higher prices than others. We quote Common Iron Bars at 2.15c. to 2.25c., at mill, in carload lots. For attractive orders these prices might be shaded by some mills. We quote Steel Bars at 2.25c. to 2.50c., at mill, and note that some sellers are quoting 2.75c., at mill.

Merchant Steel.—There is a continued good demand and the mills are well filled up with old contracts, and with new business that is being entered at full prices. The tone of the market is strong, and we quote: Toe Calk, 2.75c. to 2.85c.; Machinery, 3c.; Tire, 2.75c.; Open Hearth Spring, 3.25c. to 3.50c.; Open Hearth Crucible, 3.50c. to 3.75c.; Sleigh Shoe, 2.75c. to 3c.; Plow Slags, 3-16 and heavier, 2.75c.; Tool Steel, 7c. and upward, depending on quality, freight allowance, terms 30 days, except Tool Steel, on which 60 days are allowed, 2 per cent. cash in 10 days.

Skelp.—The Skelp market is quiet, and there is very little inquiry. We quote Grooved Iron and Steel Skelp

at 2c. to 2.05c. for ordinary widths, and Sheared Iron and Steel Skelp at 2.40c. to 2.45c., delivered, buyer's mill, Pittsburgh.

Pipes and Tubes.—The Pipe market is strong, and established prices are being rigidly held. There is a good deal of demand, and the mills are well filled up. We quote Black and Galvanized Merchant Pipe at 50 and two 10's delivered in carload lots, and 50, 10 and 5 per cent. for desirable orders in less than carload lots, f.o.b. maker's mill. We quote Screw and Socket Joint Weld Casing at 40 per cent.; Inserted Joint, 35 per cent., with an optional 5 per cent. to dealers. Boiler Tubes are in heavy demand, and mills are away behind in deliveries. The market is very strong, and we quote: 1¼-inch and 1½-inch Iron, 40 per cent.; Steel, 40 per cent.; 1¾ to 2½ inch Iron, 50 per cent.; Steel, 55 per cent.; 2¾-inch and larger Iron, 52½ per cent.; Steel, 55 per cent., with an extra 5 per cent. in carloads; less than carloads, f.o.b. maker's mill, Pittsburgh, while carloads are delivered within certain specified territory.

Connellsville Coke.—Within the past week or ten days some very large contracts for Furnace Coke, running through all of next year, have been closed and at high prices. The car shortage has not shown any improvement, and shipments continue to be considerably hampered. It has been claimed that if the railroads had 50 per cent. more cars than they have now they would not have more than would be required to handle the immense output of the Connellsville region. The construction of new Coke ovens is a feature of the Coke business just now. Probably more ovens are under construction in the Connellsville region than ever before. Last week out of 19,109 ovens in the region, 18,236 were active and 873 idle, the production having been 189,610 tons. We quote Furnace Coke at $2.75 to $3, and Foundry Coke is strong at $3 a ton, f.o.b. at oven.

Birmingham.

BIRMINGHAM, ALA., October 30, 1899.

There has been a material change in the demand for Iron the past week. It was much more active. Larger lots were inquired for and the transactions were on a larger scale than has lately prevailed. One interest made an offer for 25,000 tons at 25c. under current values. They did not get it. Sales in good lots were made of No. 1 Foundry at $19, No. 2 Foundry and No. 2 Soft at $18, and No. 3 went at $17. In small lots some went at higher values, and there were some sales at values lower than quoted. The range was about the same as heretofore quoted. The sales were irregular, but all found buyers for what they desired to sell. It was estimated in some quarters that the week's sales covered a month's production and the bulk of them were of the first half of 1900. On some of the orders accepted delivery commences in December. Taken altogether it was a satisfactory week to the sellers. We are still above European prices, freight considered, but prices are nearer together by $1 than a short time ago. There is now only $1 to $1.25 against the export business.

It is now announced that a deal has been closed which insures the building of the furnace contemplated by John M. Harrison. An arrangement has been effected with the De Bardeleben interests at Bessemer for the supply of material and a site, &c., so there is nothing now to hinder the consummation of the plan. Others are contemplated and will follow just as fast as inducements in the way of necessary facilities are offered. If we had any addition to our present furnace capacity the puzzle would be in the assembling of material. Capacity in this direction has been increased and it is being gradually added to. But the furnace demands are equal to supplies that can be furnished, and it will be months yet before the situation is this respect is an easy one. The management of the Steel mill are rushing things to be in operation during the progress of the State Fair. Entire cars of delayed machinery and supplies are coming in as express matter on "hurry" orders, to be fitted in place without further delay. The time occupied in its erection has been about 16 months. Four months of this time can be charged to unavoidable delays on contracts. The Rod and Wire Nail mill, in emulation of the Still mill, is bending every energy to an early start for business. There is some disturbance in the ranks of the miners in portions of the district, and an embryo strike is on. Efforts are being made to reconcile the differences, and it is probable that "peace will reign in Warsaw" again, and the disturbance end.

There has been a hitch in the location of the site of the Dimmick Pipe Works, but the statement is now made that all differences have been reconciled and the works will be located at North Birmingham. The various railroads have been much exercised at the complaints of shortage of cars and have made some progress in lessening the deficiency in cars for Iron. But it is a serious thing yet. One interest reports that while they have an accumulation of 4000 tons in furnace yards, they would not have 500 tons if their requisitions for cars had been supplied promptly. Those buyers who are clamoring for delivery of lots due and overdue can now see where the difficulty is in delivery. Everything that can be done to relieve the situation is now resorted to, but it will be some time before the evil is fully remedied. The effect on the mines has been more acutely felt, as it decreased output 25 to 33 1-3 per cent. The situation has been a serious one. The largely increased demand for transportation was not anticipated. Time there, too, is an important factor in rectification. Statistical figures of the Iron industry of the district make a favorable showing. The year's shipments show to October 1, 692,437 tons, an increase of 87,685 tons. The shipments of Pipe were 50,880 tons, an increase of 17,485 tons. Export shipments of Pig Iron were 141,002 tons, an increase of 31,763 tons. The higher domestic market made August shipments 7000 tons less and September 6700 tons less, and the year will probably close between 30,000 and 40,000 tons less than last year. The Philadelphia Furnace at Florence, the Sloss-Sheffield management anticipate, will be in blast last half of November, and the Hattie Ensley at Sheffield the latter half of December. They are pushing preparations hard to have them in operation at the times specified.

St. Louis. *(By Telegraph.)*

Office of *The Iron Age*, 512 Commercial Building, ST. LOUIS, November 1, 1899.

That the Iron and Steel business with its relative branches will be maintained in good volume in 1900 has been held to be practically assured by the heavy tonnage order for Rails placed by the railway lines of the country, as announced in *The Iron Age*. There is no denying that a pessimistic view of next year has been taken recently by those who consider prices far out of reason's boundaries. It is now, however, a fact that the recent orders for Rails have been of immense influence in convincing the trade that the business of 1900 is not going to fall behind the record made this year. Closely following the Rail orders is the announcement that the orders have been placed in various company shops and outside for a great number of freight cars. This is an additional convincing factor that the officials look for a heavy movement of grain and merchandise. In this territory the shortage of cars to-day is the cause of more or less embarrassment to the interests involved.

Pig Iron.—On the whole orders this week have been more freely offered. Buyers seem to be looking ahead with less doubt than was noticed in weeks past. No unusual movement has been noticed, but negotiations are under way to-day involving a considerable tonnage. Open Hearth Basic Pig is in great demand, but nothing has come forward during the week to bring relief to consumers. More Iron is being melted all along the line, and general jobbing founders report no easing up. The stove foundries of this city are pushed to the limit of their productions and are still behind in shipments. The mild weather prevailing recently kept demand somewhat in check, but acted only as a temporary aid. Less criticism is being made of Irons to be used by founders generally, and when regular grades are not to be had there is great readiness to accept what can be delivered. November 1 freight rates were advanced, applying to points north of the Ohio, but St. Louis and rates on points between here and Birmingham on direct lines and between Cairo and St. Louis on the west side of the Mississippi, remain unchanged. The storage of Coke is daily becoming more apparent, and the furnaces are hard worked to get a supply. Some of the large Coke interests are said to be sold up well into next year, and others complain that inability to obtain cars is checking their operations. No change in price is noted, and we quote as follows, for cash, f.o.b. cars St. Louis:

Southern, No. 1 Foundry	$22.25 to $22.50
Southern, No. 2 Foundry	21.25 to 21.50
Southern, No. 3 Foundry	20.25 to 20.50
No. 1 Soft	22.25 to 22.50
No. 2 Soft	21.25 to 21.50
Gray Forge	20.00 to 20.25

The extensive freight car orders placed by railroads have caused purchases of over 30,000 tons of Malleable Car Wheel and Foundry Iron to be made in this market within the last few days. The Iron is for delivery during the first half of 1900, and was bought at full market prices.

Bars.—The conditions are practically unchanged. Specifications are coming in quite freely and mills report better shipments. Complaint is made that the mills are holding back on orders, but it is found that such cases are mostly confined to specifications for special sizes. Anything out of the regular run is always subject to de-

lay, but when every manufacturer is running under high pressure the delay in receiving material is felt the more keenly. Mills report no change in prices, and carload lots are quoted at 2.35c., base, for Iron, half extras, East St. Louis. Jobbers still advise 2.75c. to 2.90c. base, full extras, as the range for small lots. The demand for Tire Lengths keeps up surprisingly well, and vehicle manufacturers report a record breaker trade for October. Bar Steel is almost impossible to be had for prompt shipment and the mill price of 2.35c. to 2.50c., base, half extras, must be figured on for deferred shipments only. Jobbers report 3c., base, full extras, for small quantities.

Rails and Track Supplies.—A satisfactory trade is spoken of in the regular line of purchasing. No transaction of moment in the way of Track Supplies is reported. We quote: Splice Bars, Steel, 2.55c.; Iron, 3c. to 3.50c.; Track Bolts, with Square Nuts, are now 3.65c.; with Hexagon Nuts, 3.90c.; Spikes, 2.85c.; Steel Links and Pins, 3.20c.

Pig Lead.—Last sales heard of carried 4.42½c. for Soft Missouri. Chemical is reported at 4.45c., with some refiners asking 4.47½c. Practically nothing doing in the Lead market. Lead Ore fell off 50c. per 1000 lbs., and reached $26.50.

Spelter.—Prices continue down hill, and it is the feeling that the bottom has not yet been reached; 4.80c. to 4.90c., St. Louis, is a fair quotation to make. No transactions are reported, and nothing is going on. The smelters have a plentiful supply of Spelter on hand, and no likelihood of the stock being immediately depleted. A committee from the Joplin Miners' Association came to see the smelters, but the conference was productive of no results. The visit made it evident that no agreement exists among smelters such as obtains in the Ore region, for no unity of action was had among the former. In an interview one of the Ore miners' committee is credited with saying that Spelter was not in demand because of shortage and high price of Sheet Iron and Steel. Inquiry develops that orders for Sheet Iron could be freely placed to-day for early shipment, so that could not have been the real reason for slackening in demand for Spelter. It is a fact that a plentiful stock of Galvanized Sheets can be had out of jobbers' stocks, but that the demand is extremely light and at somewhat lower figures than prevailed lately.

Zinc Ore.—A reduction of $3 was made November 1 in price schedule for 60 per cent. Assay Ore, making it now $40 per ton. The Miners' Board announce that prices will be named weekly hereafter until the metal market resumes its normal condition.

The German Iron Market.

ESSEN, October 15, 1899.—In spite of the advanced season, in which usually the Iron market quiets down, the great activity continues which started in the spring. The enormous consumption, which has never been experienced before by the German Iron industry, shows no signs of lessening, and the scarcity of raw material continues which has been characteristic of the market for a long time. So long as these two factors remain potent we believe any reaction to be entirely out of the question.

The Coke syndicate has lately advanced the price of Furnace Coke from 14 to 16½ marks per ton. This advance is to apply to the deliveries after January 1, 1901, and half of the advance to contracts already made for the period from July 1, 1900. Since the deliveries of Coke by the syndicate amount to about 7,000,000 tons per year, this advance represents an increase of revenue of 17,500,000 marks.

There is nothing new to report concerning the Iron Ore market. The small quantities of Spathic and Brown Iron Ore which come into the market are readily taken and prices are unchanged.

In Pig Iron the demand still exceeds the capacity and the production of the furnaces. For the first half year of 1900 large quantities of Pig Iron are still needed, and it is certain that the requirements of the works cannot be fully covered either in ordinary or in special mill Iron or in Foundry grades. The syndicate has closed out for the third quarter of 1900, having placed its entire production three days after sending out its offers. Prices are as follows: Spiegeleisen, 85 to 87 marks, f.o.b. Siegen; High Quality Mill Iron, 76 to 78 marks, f.o.b. Siegen; German Bessemer Pig, 93 marks; Thomas Pig, 86 marks, f.o.b. Steel works; English, No. 3 Foundry, 88 marks, f.o.b. Ruhrort; Luxemburg, No. 3 Foundry, 82 marks; German, No. 3 Foundry, 88 marks; Hematite, 93 marks, all per metric ton, and unless otherwise stated, f.o.b. furnace.

This recent advance for Pig Iron may serve as an example which consumers themselves will soon imitate, because they are able to refer to high cost of their Raw Material. While there seems to be no danger of an early cessation of the movement so long as the present consumption and the famine for material continue, it is certain that the end must come earlier as the result of an excessive rise in prices. When the reaction does come those consumers will be in a very unenviable position who have been forced to contract for Raw Material for long periods. Thus buyers of Pig Iron have been forced to enter their orders a full year in advance. While they must follow any decline, as experience has too frequently shown, they themselves are tied down to the acceptance of dear Raw Material. Under present conditions there is no latitude in buying or waiting; foundries must pay the price demanded, and have reason for rejoicing if they can secure enough Pig Iron to enable them to run their plants fairly regularly. Under the circumstances it is easy to explain their fear in being forced to cover now at prices as high as they are until the end of 1900.

The mills who consume Billets and other intermediate products are facing the future with some hesitation. They have been suffering from a scarcity of Raw Material for nearly a year, and have no hopes of an easing up in this direction in the near future. The Wire mills particularly are suffering severely. Recently they bought 60,000 tons of Billets from Steel works of the syndicate for delivery during the next year at the price of 120 marks per ton. Since the syndicate is not in a position to cover the enormous requirements it is not a matter of surprise that the Wire, Plate, Bar and Hoop mills use every means to improve their position. In these circles the question has come up for consideration whether it is desirable to ask the Government to take off the duty on Billets, &c., during the period of this scarcity. Naturally the Steel works do not want to know anything of such a course, but if they cannot help the mills they seem to have little right to agitate against such a method of relief. In the mean time the Billet syndicate has begun the sale for the second half of 1900 at the following prices: Ingots, 117 marks; Blooms, 122 marks; Billets, 127 marks; Sheet Bars, 131 marks, all ordinary Basic Bessemer quality, f.o.b. Ruhrort, Dortmund, Rothe Erde or Diedenhofen.

Along the whole line of rolling mill products the enormous consumption still continues. The works throughout are far behind in deliveries, and the winter months will probably pass before all the old orders, many of which were taken early this year, have been settled. The production of all the works is closed out to July, 1900. Beyond that orders are not numerous, because it has been impossible to cover on Pig Iron.

Steel Bars are selling at 180 to 185 marks, and Iron Bars at 200 marks per ton. The higher prices for Wire Rods have made the Wire mills, too, accept more work for the home market, and since they are selling at 175 marks the business is remunerative. Unfortunately, so far as Wire Rods are concerned, the mills have so many old orders at low prices that there can be little question of remunerative business at present. Besides the Rod mills are seriously hurt by the scarcity of Billets, and the same complaint comes from the Hoop mills. There is an abundance of work in Sheets, which sell at 200 to 210 marks per ton, while Hoops are quoted 190 marks per ton, f.o.b. mill.

The Tube works have orders for months to come, and the new plants are also fully employed. The mills are in constant trouble over the supply of Skelp. The car shops, machine shops and foundries are under heavy pressure. Unfortunately there is a scarcity of labor, notably skilled labor, at all points.

New York.

Office of *The Iron Age*, 232-238 William street,
NEW YORK, November 1, 1899.

Pig Iron.—A moderate inquiry for early delivery continues, and a fair amount of business has been closed in this section and in New England. Some of the leading Northern furnace companies have advanced their prices further, but other producers have not yet followed suit. We quote as follows: Lehigh and Schuylkill Irons, for 1900 delivery, No. 1 Foundry, $24 to $25; No. 2 X, $23 to $23.50; No. 2 Plain, $21.25 to $21.50, and Gray Forge, $19.75 to $20. Southern brands are quoted: No. 1 Foundry, $23 to $23.50; No. 2 Foundry, $22 to $22.25; No. 1 Soft, $22 to $22.25; No. 2 Soft, $21 to $21.25; No. 3 Foundry, $20.75 to $21.75, and Gray Forge, $20.25 to $20.50.

Cast Iron Pipe.—Some of the shops are beginning to run on stock, the demand for heavy Pipe being light. The bids on the 6000-ton order for Detroit have been rejected on the ground that the prices were too high. The lowest bid was that of an Eastern shop, the next lowest being that of a local foundry.

Steel Rails.—The Eastern mills do not report any new business. The Western mills, however, are still fig-

uring on additional tonnage. We quote: $35 to $37 for Standard Rails, $2.30 to $2.50c. for Angle Bars, and 2.65c. to 2.75c. for Spikes, delivered.

Finished Iron and Steel.— Among the orders placed are a dock shed for the Pennsylvania Railroad, and structures for the International Paper Company, aggregating about 2000 tons. Among the larger contracts coming into the market is a block of 5000 to 6000 tons of Structural Material for a very large apartment house. For early delivery and in moderate quantities, Beams, Channels and Angles are quoted at 3c. Plates have again become firmer in the local market. We note a sale of 5000 tons of Hoops for 1900 delivery to a leading consumer. We quote: Beams, 2.40c. to 2.50c.; Angles, 2.40c. to 2.45c.; Universal Mill Plates, 2.65c. to 2.75c.; Tees, 2.40c. to 2.45c.; Channels, 2.40c. to 2.50c.; Steel Plates are 3c. to 3.10c. for Tank, 3.15c. to 3.25c. for Shell, 3.35c. to 3.40c. for Flange, 3.45c. to 3.55c. for Fire Box, 3.75c. to 4c. for Locomotive Fire Box, on dock. Charcoal Iron Plates are 3.15c. for C. H. No. 1, 3.65c. for Best Flange and 4.15c. for Fire Box. Refined Bars are 2.20c. to 2.25c. and Common Bars are 2c. to 2.10c., on dock. Soft Steel Bars, 2.50c. to 2.55c.; Hoops, 2.75c., base, delivered.

The Carnegie Steel Company, Limited, announce that the company will hereafter be represented as to their Structural Steel business by Alfred R. Whitney, formerly of A. R. Whitney & Co., with offices in the Empire Building, 71 Broadway, New York.

The Empire Iron & Steel Company have issued an exceedingly handsome volume descriptive of their properties. Many of them are historically conspicuous, like the famous Oxford and Crane. The different divisions are the Oxford, Crane, Topton, Reading, Macungie, Bellefonte, Goshen, Shenandoah and Greensboro. A very fine series of plates illustrate the principal features of the different plants.

Metal Market.

Office of *The Iron Age*, 232-238 William street,
NEW YORK, November 1, 1899.

Pig Tin.— During the week under review this market has been dull, showing a tendency toward lower prices. At this writing the market is weak and nominal, quotations extending over the wide range between 30½c. to 31c. The latter figure is held out for by certain interests, while other parties state that the metal can be secured at 30½c. The London market to-day closed easy at £140 5s. for spot and £140 for three months' futures. Statistics for the month of October show a reduction of 714 tons, but still these figures are not considered favorable, as consumption here is falling off. The shipments from the Straits for the month were 300 tons less than last month, or 3900 tons in all.

Copper.— Another break has brought the prices of Lake down to 17c. This is now the "official" price, and it is stated that the metal can be had at that price without much trouble. A rumor which has been impossible to verify says that the Calumet & Hecla interests have just held one of their sales and disposed of a large block at 17c. Real values are rather uncertain, as at the moment no one is doing much. Consumers are holding off waiting for things to settle. Electrolytic and Casting have naturally gone down with higher grade, and both are quoted to-day at 16⅞c. to 17c. It will be noted that on this basis the price of Electrolytic relative to Lake is nearer its normal position than it has been for some time. The exports for the month of October have been greater than during the previous month, amounting to 10,200 tons. Nevertheless we are still in the neighborhood of 20,000 tons below last year's exports. The London market fluctuated violently, and, as a whole, declined almost £2 up to the close to-day. Closing prices to-day were £72 7s. 6d. for spot and £72 10s. for three months' futures. Best Selected is quoted to-day £79 5s., which is about 5 shillings lower than last week. Two large transactions in Copper Wire were reported during the week.

Pig Lead — Is without change. The prices quoted by the American Smelting & Refining Company are still 4.57½c. to 4.60c. for desilverized, New York, and 4.50c., St. Louis. Dealers here are holding out for 4.60c. to 4.62½c. for spot. London has advanced to £17 10s.

Spelter. — Has been extremely weak and declined heavily. To-day the market is quoted 4.85c. to 5c. for spot and 4.80c. to 5c. for futures. Private advices from St. Louis report sales at 4.75c. London has taken another drop of 5 shillings and comes at the close to-day £21 10s. The miners have resumed operations and ended their four weeks' effort, which though expensive to them proved a total failure by not accomplishing what they anticipated. It is said that there is still a surplus of Spelter on hand. We are advised from the West that the miners have lowered the price to the extent of $3 per ton in 60 per cent. grade.

Antimony — Is unchanged. Hallett's and Cookson's are firm at 9¾c. and 11c. respectively.

Nickel.— The schedule for next year has not been fixed as yet and prices are still 36c. to 40c. for lots larger than 1000 pounds, and 40c. and upward for smaller amounts, price being proportionate to quantity purchased and delivery.

Tin Plates. — The report that the American Tin Plate Company are withholding from the market in anticipation of higher prices is denied here. We are informed that there has been absolutely no change and that the American Tin Plate Company are still quoting $4.82½ to $4.87½ per box for 100 lb. Cokes, New York delivery.

A Brass Consolidation.

Consolidation of the Coe Brass Mfg. Company of Torrington and Ansonia, Conn., the Waterbury Brass Company of Waterbury, Conn., and the Ansonia Brass & Copper Company of Ansonia, Conn., has been practically effected. It is expected that these companies will operate jointly by about the first of next year. It is said that the three concerns will be consolidated under one management, each company, however, remaining in many respects under the control of their own Board of Directors, as at present.

Charles F. Brooker, president of the Coe Company, will be the manager of the combined companies, and it is understood that a central office will be located at Waterbury.

We are informed that this deal is independent of the American Brass Company, who were formed last spring, although Mr. Brooker is also president of the latter company. The American Brass Company were formed chiefly to avoid the nullification of a charter which was secured in Connecticut some years ago, and although the company are in existence and possess the charter they are really inoperative. It is possible that the recently consolidated companies will secure this charter, but a number of the directors of the American Brass Company do not figure in the latest movement. The opinion is advanced by men prominent in the trade that the recent consolidation is but a nucleus and that the other companies will be included eventually.

Charles F. Brooker, who was instrumental in effecting the combination, stated that details were not sufficiently arranged to say more than that the three companies had been combined.

Alfred A. Cowles, vice president of the Ansonia Brass & Copper Company, has authorized the following statement:

The relations of the Coe Brass Company and the Ansonia Brass & Copper Company have been very friendly for a long time, so that a consolidation was natural. The Waterbury Brass Company came into the deal by reason of the fact that many of the directors and stockholders of that concern were similarly identified with the Coe Brass Company.

These three concerns are all that are interested in the deal up to the moment, with the exception of Wallace & Sons, who sold out some time ago to the Coe Brass Company. It is understood, however, that other companies will be taken in later. The three concerns mentioned control a substantial share of the brass business of the country.

The details of the consolidation have not yet been decided upon. The new company will, however, be capitalized at about $6,000,000, all in common stock. It is expected that the stock will be closely held and there is no intention at present of trying to list it on any exchange. The name has not yet been selected.

The company are in a position to use the charter of the American Brass Company, which was secured from the Connecticut Legislature early in the year, when a $20,000,000 combination was proposed. On the other hand a new charter may be taken out under Connecticut laws, which are liberal.

The Metal Sales Company have been incorporated under the laws of Ohio, to sell the product of the Magnolia Metal Company in Ohio, Indiana and Michigan. F. B. Squire has been elected president and Howard E. Cole secretary and treasurer.

The Carnegie Steel Company, Limited, recently made a shipment of 350 tons of steel rails to Tampico, Mexico, with all equipment for laying tracks, including 10,060 nuts and bolts, 5030 splice bars and 73,920 spikes. The rails are of light grade weight and will be used to construct a small railroad on a sugar plantation near Tampico.

QUOTATIONS OF IRON STOCKS DURING THE WEEK ENDING NOVEMBER 1, 1899.

Cap'l Issued.		Sales.	Thursday.	Friday.	Saturday.	Monday.	Tuesday.	Wednesday
$29,000,000	Am. Car & Foundry, Common..	11,560	16¾-18	16¾-17⅝	16⅝-16⅞	16¾-17	16⅞-17	17 -17⅛
29,000,000	Am. Car & F'y, Pref. (7% Non-Cu.)	9,309	64 -65⅝	63¼-64	-45½	63 -63¼	62 -63⅛	62¾-63⅝
19,000,000	Am. Steel Hoop, Common.....	5,450	43 -43⅛	42⅛-42⅝	42 -42⅛	-42⅜	40¾-43	43 -43⅞
14,000,000	Am. Steel Hoop, Pref. (7 % Cu.).	1,070	.....	82½-83	.....	82⅛-82⅞	-82	82 -82¼
50,000,000	Am. S. & W., Common.....	98,725	49 -50⅜	47¼-50	45¾-48¼	45⅝-48⅛	45½ 49	47⅜-50
40,000,000	Am. S. & W., Pref. (7 % Cu.)....	7,795	95 -95⅛	93 -94½	93 -94	93¼-94½	93 -94	93¼-94⅜
28,000,000	Am. Tin Plate, Common, N. Y..	13,905	34⅛-36	34 -34¾	32½-34	33 -34	31⅛-34½	34 -35
18,000,000	Am. Tin Plate, Pref., N.Y. (7% Cu.)	1,380	83 -83¼	-82⅜	-82	.....	-82¾	.....
28,000,000	Am. Tin Plate, Com., Chic.....	3,365	35 -35¾	34 -34½	.....	33 -34	31⅜-34	34 -34½
18,000,000	Am. Tin Plate, Pref., Chic. (7% Cu.)	350	82¾-83	-82	.....	-83	.....	.....
7,500,000	Bethlehem Iron†.....	149	-61	-61	60¼-61	....	.....	.....
15,000,000	Beth. Steel, Par $50, $1 paid in.	612	.....	-20¾	.....	-20¼	20 -20¾	-20
7,974,550	Cambria Iron, Phila*.....	499	44⅝-44¼	-44⅝	.....	-44½	-44¼	-44¼‡
16,000,000	Cambria, Steel**.....	3,698	23¾-24⅛	23⅞-24	23⅞-24	23⅞-24¼	-23¾	-21‡
11,000,000	Col. Fuel and Iron.....	16,640	55⅛-56	55 -56⅛	55⅝-55¾	55 -56⅛	54 -55⅛	54¾-56
46,484,300	Federal Steel, Common.....	152,810	54⅛-55⅛	53¾-55	53¾-54⅞	54¾-55¾	54¼-59⅜	58¼-60¼
53,253,500	Federal Steel, Pref. (6 % Non-Cu.)	14,580	78¾-79¾	78¾-79¼	78¼-78⅞	78½-79	78⅛-80¾	79⅜-81
32,000,000	National Steel, Common, Chic..	2,550	-48	47¾-48	47⅛-47¾	47⅜-49⅝	-48¾	49 -49¼
27,000,000	National Steel, Pref., Chic. (7% Cu)	550	-94	94 -94¼	-94	.....	.....	.....
32,000,000	National Steel, Common, N. Y..	13,585	48 -48¼	-48⅛	47¼-50	47¾-49¾	47⅝-50¼	48¾-50⅛
27,000,000	Nat'l Steel, Pref., N. Y., (7 % Cu.)	1,558	-94⅝	94¼-94⅜	.....	93¾-94⅝	-94	-93⅞
5,000,000	Penna., Common, Phila.....	59	.....	-79	.....	.....	.....	.....
1,500,000	Penna., Pref., Phila.....	68	.....	-82¼	.....	.....	.....	.....
12,500,000	Pressed Steel, Common.....	2,275	58¼-59	59 -59⅝	59¼-59¾	59 -59¼	.....	-58⅛
12,500,000	Pressed Steel, Pref. (7 % Non-Cu.)	2,311	89½-89¾	-89½	-89¾	-89¼	89¼-89¼	.....
27,352,000	Republic Iron & Steel, Common.	8,228	24¼-24½	25 -25¾	24¼-24⅞	24⅝-25¾	24⅛-26¼	25⅛-26¾
20,852,000	Repub. Iron & Steel, Pref. (7% Cu.)	5,178	70 -71	70 -70⅝	-69¾	70 -71	70 -70¼	70 -70½
20,000,000	Tennessee Coal and Iron.....	19,425	116¼-117⅜	117 -119¾	117¼-118¾	117¾-119¼	116¾-118	116½-118
1,500,000	Warwick Iron & Steel, (par $10)	2,077	11⅞-12	11¾-12	. ...	11¾-12	11¾-11⅞	-11¼‡

*Par $50. **$1.50 per share paid in. † 6 % guaranteed by Beth. Steel Co. ‡ Ex. dividend. Late Philadelphia and Chicago sales by telegraph.

Bonded Indebtedness: Am. S. & W., $130,656; Am. Tin Plate, none; Am. Steel Hoop, none; Cambria Iron Co., $2,000,000 6 % debenture 20-year bonds, payable option 5 years, assumed by Cambria Steel Co.; Federal Steel Co., $13,300,000 Illinois 5 %, $7,417,000 E. J. E. R. R. 5 %, $1,600,000 Johnson 6 %, $6,732,000 D. & I. R. R. R. 5 %, $1,000,000 2d D. & I. R. R. R. 6 %, $10,000 land grant D. & I. R. R. R. 5 %; National Steel, $2,561,000 6 %; Tennessee C., I. & R. R. Co., $8,367,000 6 %, $1,114,000 7 %, $1,000,000 7 % cu. pref.; Pennsylvania Steel, $1,000,000 Steelton 1st; $2,000,000 Sparrow's Point 1st, $4,000,000 consolidated, both plants; Bethlehem Iron, $1,351,000 5 % maturing 1907. Interest and principal guaranteed by Bethlehem Steel Co. Republic Iron & Steel, none; Warwick Iron & Steel, none. Colorado Fuel & Iron Co.: Col. Fuel Co. Gen Mort 6 % $880,000; Col. Coal & Iron Con. Mort. 6 % $2,810,000; Col. Fuel & Iron Gen. Mort. 5 % $2,303,000. Also outstanding $2,000,000 preferred stock with accumulated dividends of $640,00 to June 30, 1899

Iron and Industrial Stocks.

During the week under review the principal movement was in the American Steel & Wire and Federal Steel stocks. The former declined sharply during the week, as the result of reports that the company is short of steel, for the first half of 1900, and that so much money is being expended on improvements and new properties that dividends on the common are not likely to come for some time. To-day there was a sharp recovery.

The Federal Steel issues have been active, and have advanced on the report that the regular dividend of 3 per cent. will be declared on the preferred stock, making the full 6 per cent. for the year, and that the payment of dividends on the common will be begun in January, at the rate of 5 per cent. per annum.

	Bid.	Asked.
International Silver, Common	15¼	15½
Otis Elevator, Common	29½	31
Otis Elevator, Preferred	91	93
H. R. Worthington, Preferred	109	...
Cramp's Shipyard Stock	68	78
Pratt & Whitney, Common	3½	5
Pratt & Whitney, Preferred	50	54
E. W. Bliss, Common	132	...
E. W. Bliss, Preferred	125	...
U. S. Projectile	95	100
Barney & Smith Car, Common	21	25
Barney & Smith Car, Preferred	79	81
International Pump, Common	20	22
International Pump, Preferred	70	72
Diamond State Steel	7	7⅛
Tidewater Steel	13⅜	13⅞
Sloss & Sheffield Steel & Iron, Common	38	40
Sloss & Sheffield Steel & Iron, Preferred	76	78
National Tube, Subscription, Common	46	46½
National Tube, Subscription, Preferred	98	98½
American Bicycle Company, Common	23½	25
American Bicycle Company, Preferred	63	65
American Bicycle Company, Bonds	90	91

The following statement gives the earnings of the first and second quarters of the existence of the American Car & Foundry Company, they having started work on March 1:

Three Months Ending May 31.	
Gross earnings	$9,157,796
Cost of materials, operating expenses, &c	8,498,979
Applicable to dividends	$658,817
Three Months Ending August 31.	
Gross earnings	$10,033,175
Cost of materials, operating expenses, &c	9,102,263
Applicable to dividends	$930,911
Surplus on hand August 31 after paying dividend of July 1	1,080,354

The installments on the $500,000 Warwick Iron & Steel additional stock are payable: $2 November 15, $2 February 15, $2 May 15, $2 August 15, $2 November 15.

The initial public quotation on common stock of Pittsburgh Stove & Range Company was made in Pittsburgh on Monday, October 30, at 15 bid, and the preferred continued to offer at 49, the par of each being $50. As the preferred carries 65 per cent. of the common as a bonus to original subscribers, the latter can figure a profit at the above figures of $8.75 on every share of the preferred taken.

The Otis Mfg. Company have declared a semi-annual dividend of 5 per cent., payable November 1. This is an increase of 1 per cent.

From the returns compiled by *Lloyd's Register of Shipping* for the quarter ended September 30, 1899, it appears that, excluding war ships, there were 558 vessels, of 1,347,459 tons gross register, under construction in the United Kingdom at the end of the quarter, a reduction of about 38,000 tons as compared with the figures for each of the two previous quarters in the current year. The war ships under construction in the United Kingdom comprise six first-class battle ships, one first-class armored cruiser, one first-class and one third-class protected cruiser and four sloops at the royal dock yards; seven first-class battle ships, eight first-class armored cruisers, one second-class protected cruiser, two gunboats, two sloops and 18 torpedo boat destroyers for the British navy in private yards, while seven armored vessels, one protected cruiser, nine torpedo boat destroyers, 11 torpedo boats and two river gunboats are being constructed for foreign navies in private yards.

George T. Lincoln, United States Consul-General at Antwerp, Belgium, in a recent report to the State Department, describes a large dredge that has just been built to the order of the Russian Government by the Cockerill Company at their works at Hoboken, near Antwerp. The dredge in question is destined for service on the river Volga. It is 216 feet long, and is composed of two halves 31½ feet wide and 9 feet deep, so that it can pass through narrow channels easily, and yet make a cut 62 feet wide. Each of the two hulls is built entirely of steel. The pumps and cutters are operated directly by steam, but the propelling apparatus, a set of screws, is driven by an electric motor, which derives current from a dynamo carried on board the dredge. The entire electrical equipment was supplied by the General Electric Company of New York.

The Long Island Railroad Company are equipping five miles of track on the Far Rockaway branch of the system with the safety third rail for operation by electricity. Should the experiment prove successful it is likely that the entire road will be equipped with the third-rail system from end to end.

The New York Machinery Market.

Office of *The Iron Age*, 232-238 William street, }
NEW YORK, November 1, 1899. }

We are informed through a reliable source that the contract for the engines to be installed in the mammoth new power station of the New York Light, Heat & Power Company has been awarded to the Westinghouse Machine Company. It is said that the contract calls for 16 engines of 5500 nominal horse-power each. The "Waterside" station, as it will be termed by the company, is to be erected on First avenue, between Thirty-eighth and Thirty-ninth streets. It will be recalled that Thayer & Co. of 39 and 41 Cortlandt street were awarded the boiler contract and the order for the buildings was placed with Milliken Brothers. Thus far these are all the materials which have been ordered. It is said that the company are in the market for a 50-ton electric traveling crane.

The Manhattan Railway Company are preparing specifications for the mechanical accessories incidental to the boiler, engine and electrical equipment recently ordered for the new power station which they are building. It is stated that the electrical equipment has been split up between the Westinghouse and General Electric Companies. Quantities of the "third rails" ordered recently are now being delivered. It is expected to have at least an experimental branch of the road in operation by January 1 of next year.

We are officially advised of the fact that the Riter-Conley Mfg. Company of 39 and 41 Cortlandt street and Pittsburgh have received the contract for building the power station for the Town Corporation of Tramways of Glasgow, Scotland. It is said that the amount of the contract is about $130,000. It will be recalled that for this Scotch enterprise Allis engines and Babcock & Wilcox boilers have been ordered. They are now considering the purchase of fuel economizers, one 30 ton and two 50-ton electric traveling cranes and other appurtenances. The National Conduit & Cable Company of New York were awarded a contract for about 2,000,000 feet of 3-inch wrought iron conduit pipe. J. D. Warwick Town Corporation of Tramways, Glasgow, is receiving the bids and sending out specifications.

The Link Belt Engineering Comany have just received an order for equipping the Cambridge station of the Boston Elevated Road with an automatic car haul, which will be used to haul coal cars to a position for delivery of the coal to automatic stokers.

It is said that the Delaware River Shipbuilding Company (Roach's ship yard) of Chester, Del., received another order for a large Hawaiian steamer.

In the machine tool trade the consensus of opinion seems to be that the month of October proved not satisfactory throughout. One merchant declared that his books show it to be the best of the year and he attributes this largely to the fact that during the whole month he has been receiving consignments of tools which were ordered as far back as last March. The large tool dealers and builders report that the month brought about enough business to send possible deliveries further into the distant future and increase the cramped condition of their shops.

At the offices of the Niles Bement-Pond Company it was stated that work is now under way toward enlarging their Philadelphia Engineering Works plant. This plant will be used exclusively for the building of electric traveling cranes when the additions are completed. We are informed that this company will build identically the same crane which the Morgan Engineering Company formerly built for the Niles Tool Works Company.

The new German Niles plant will be ready for operation in about two weeks. The equipment is almost all in place now and the power transmission machinery is being installed.

Rudolph Kirschbaum, who has been purchasing machinery for the equipment of the works which the Garvin Machine Company are to erect in Germany, is reported to have purchased the entire plant of the Warren Machine Company of Worcester, Mass. It is said in this connection that the plant will soon be dismantled and the machinery removed to Germany, where it will be erected at the new Garvin shop. Mr. Kirschbaum sailed to-day for Berlin. He will superintend the building of the plant and when finished will manage it. A contract for heating and ventilating apparatus for the new shops was awarded to the Buffalo Forge Company of 39 and 41 Cortlandt street.

The Buffalo Forge Company also received an order from the Marine Vapor Engine Company of Harrison, N. J., for a heating and ventilating plant to be installed in the new shop which the latter company are building at Harrison. The new engine company are ordering machine tools for the equipment of their plant. The buildings have just been completed.

An addition is being built to the plant of the Singer Mfg. Campany, Elizabethport, N. J. The new building will be 628 x 192 feet, five stories high. More than 2000 tons of structural steel will be required in building the frame of the structure. The contract for this material has been let to Milliken Brothers. We understand that the greater portion of the new building will be utilized as an extension of the company's milling department. The work will necessitate the purchase of considerable machinery, especially milling machines, shapers, drills and other small machine tools.

Information has reached here to the effect that the Keystone Typewriter Company will soon be in the market for a good supply of machine tools for equipping an addition which they are building to their plant at Harrisburg, Pa.

The tip has been given out in the street that the Delaware River Shipbuilding Company of Chester, Pa., will erect an air compressing plant at their yards.

A new factory will be built at Ansonia, Conn., by the Home Mfg. Company, recently organized. Bicycle pedals and light specialties will be manufactured. Joseph A. Horne is president.

F. W. Horne of Yokohama, Japan, who is the Japanese representative for a number of American machinery firms, is in this city. He is making his headquarters with W. J. Kingsland, 35 South William street. Since his arrival here he has ordered a large equipment of power transmission machinery from A. & F. Brown for the Port Arthur marine repair shops of the Chinese Eastern Railway and a number of Atlas Corliss engines to be used in connection with the same work.

McClave, Hamilton & Rimmer of 141 Broadway have just received an export order for 47 good sized steam pumps. Twenty-seven of them will go to Hong Kong and 20 to Shanghai. They also received from the Abbott & Gamble Contracting Company an order for seven large steam pumps, which are to be used for dredging purposes in connection with the Toledo, Ohio, centennial.

John McDonald & Co. of Glasgow, Scotland, have ordered from the Ingersoll-Sergeant Drill Company 12 large air compressors.

United States Consul Louis H. Ayme of Guadaloupe reports to the State Department that the manager of the largest machine shop there desires information regarding portable steam boilers, mounted on wheels; marine engines for small steamers, marine boilers, steam and safety valves, lubricators, steam and vacuum gauges, ordinary steam pumps, ordinary pumps, steam fire engines, small; centrifugal pumps, horse-power rigs, with and without shafting or other gear for transmitting power. In every case illustrated catalogues in French if possible, are desired, and the following information: Weight, net and boxed or packed for shipment; dimensions, price, f.o.b. New York City. Exterior elegance and beauty of appearance are not so much desired as solidity, efficacy and cheapness.

The Krajewski Pesant Company of 32 Broadway, agents for the Havana Dry Dock Company, have awarded a provisional contract for the steel construction of the new floating dry dock to the Riter-Conley Mfg. Company. More than 1500 tons of structural material will be required. We have not heard that pumps and other necessary machinery have been ordered.

The Ruggles-Coles Engineering Company of 39 and 41 Cortlandt street have just received an order from an American syndicate for an electric light and refrigerating plant to be erected at Guanamo, Cuba.

Catalogues Wanted.—Clark & Cowles of Plainville, Conn., desire to obtain catalogues of universal grinding machines, shapers, engine lathes and universal milling machines.

The new plant of the New Jersey Zinc Company, located at Hazard, Pa., which has been in course of construction for the last year, turned out the first of its production of oxide of zinc last week. It will probably require another year before the entire plant is completed.

The Cleveland Elevator Bucket Company, Cleveland, Ohio, shipped this week to the Great Northern Elevator Company of West Superior, Wis., 6000 buckets. This is a new elevator, and one of the largest in the country.

At Pittsburgh a deed has been filed, transferring 30 acres of land on Neville Island to Black and Gloninger, supposed to be representing the American Steel & Wire Company. It is stated that the American Steel & Wire Company have options on about 600 acres of land on Neville Island, nearly all of which has been purchased, and on which large steel works, blast furnaces, rod and wire mills will be erected.

The property formerly occupied by the Baker Chain & Wagon Iron Mfg. Company in Lower Allegheny, Pa., occupying about 5 acres, has been transferred to the Pressed Steel Car Company.

The Chicago and Northwest Machinery Market.

Office of *The Iron Age*, 805 Fisher Building, {
CHICAGO, October 30, 1899. {

Machinery builders and dealers, almost without exception, report no diminution of the unprecedented demand. The month of October brought a continued influx of orders and it is believed from information gathered from a wide field of inquiry and from many branches of the machinery trade that the volume of business surpassed that of any other month in this exceedingly busy year. Furthermore, inquiries are so numerous and requirements are seen to be still so great that the prospects for the future are of the most encouraging character. Manufacturers and dealers do not hesitate to express their confident belief that next year will see a volume of businses even larger than has been enjoyed this year. The demand is of a remarkably general character, covering large and small engines, heavy and light machinery, standard and special machine tools, power transmission appliances and all kinds of factory equipment and supplies.

High prices are deplored as a matter of course, and in some quarters danger of a reaction is expressed, but not nearly so much fear is expressed on this account as two or three months since. The pressure for everything in the machinery line is so great that the matter of prices is for the time being of secondary importance. This is seen in inquiries coming to Chicago machinery dealers from buyers in the immediate vicinity of Eastern machinery builders. If a machine can be obtained promptly the price and the freight are not permitted to stand in the way of closing the trade. The fact is also noted that buyers are doing much less shopping than usual. Machine tools are bought by men who do not leave their offices for the purpose of comparing styles and prices of different makers. Much stress being laid in certain quarters on the scarcity of raw material and labor, inquiries on this subject have been addressed to manufacturers, and it is interesting to note what they have to say in reply in the following reports, as well as on the larger subject of the condition of trade as they find it.

The Edward P. Allis Company, Milwaukee, Wis , find a vast amount of business offering, of which they can accept but a small proportion, owing to the crowded condition of their works. During the month they booked orders for three direct coupled vertical cross compound engines of 1600 horse-power each for the Havana Electric Railway Company, Havana, Cuba. The Edison Portland Cement Company, of which Thomas A. Edison is president, have ordered three vertical cross compound engines of 700 horse-power each. The Deering Harvester Company, Chicago, have ordered a large air compressor, both compound steam and compound air. A number of orders for small machines have also been taken.

Witte Iron Works Company, Kansas City, Mo., report the gas engine business about as brisk as it has ever been. They are having an unlimited amount of trouble in getting raw material and in getting new machinery. Many of the larger machine tool builders have kindly offered to fill orders in the early spring if placed at once. Labor is ample, though none too much.

Rudolphi & Krummel, Chicago, state that orders for October have kept up with previous months. The demand for standard presses was especially large, and having a good stock of them on hand they were enabled to fill orders promptly. They have encountered difficulties in obtaining forgings and steel castings as promptly as necessary. The steel foundries seem to be entirely congested with orders. They now expect a slight decrease of orders on account of the approach of the close of the year.

The Vilter Mfg. Company, Milwaukee, Wis., say that business has not been so good in October as it was the previous several months. However, they have done very well, securing some large orders for refrigerating and ice making machines, also Corliss engines, principally in the East, but some for export. They continue to operate their works day and night. They have found some difficulty in getting sufficient supplies, such as forgings. Labor so far has been ample in their vicinity.

The Shaw Electric Crane Company, Muskegon, Mich., have observed no slackening up in inquiries, but have been taking orders as freely as at any time in the past. They have experienced difficulty in securing bar iron and steel and structural material and do not yet see any change in the situation. They have had no trouble in the supply of labor.

The Whiting Foundry Equipment Company, Harvey, Ill., state that business in volume is very satisfactory, the demand being about the same as it has been for some time past. They have had much difficulty in getting some kinds of raw material, such as bar iron, channels, beams, &c., but requirements for coke and pig iron have been supplied very promptly. They have had a good supply of labor with the exception of molders. It seems somewhat difficult to get good reliable men for this class of work.

The Fort Wayne Foundry & Machine Company, Fort Wayne, Ind., say that their business has been very good for the last eight or ten months and they cannot see any reason why it should not continue to be so for some time to come. It is almost impossible to get boiler plate, bar iron, &c., from the mills at present.

Manning, Maxwell & Moore, machine tools, Chicago, say that deliveries are worrying them more than sales. They have more orders on their books than ever before, but cannot get manufacturers to make shipments as fast as desired. Much stress is placed by manufacturers, especially Eastern shops, on the difficulty of getting castings. Makers of lathes are not nearly so prompt as might be expected. Manufacturers of planers are worse, but those who turn out heavy tools are behind six to eight months in notable instances. Some quite large orders have recently been placed by agricultural implement manufacturers, but the general demand is good from all kinds of shops. Many buyers are now ordering tools without leaving their offices, less shopping being done than is usually the case. Wood working machinery is in fair demand, mostly for replacements in local shops, but a large outfit is now being purchased for Arkansas.

McDowell Stocker & Co., machine tools, Chicago, report a very good trade in October, running in excess of September. The demand, however, was of a pick up character, no large outfits being included. Inquiries are being received from Eastern machinery centers, showing the strength of the demand for quick delivery. If a buyer can find what he wants, neither price nor freight cuts much of a figure with him. While second hand machinery has for some time been rather scarce the supply is getting a little better on account of the closing out of some idle establishments which had been held until now in the hope of being able to make a fresh start. This firm have recently incorporated under the same name with a capital stock of $60 000. Some advantages are secured by incorporating which the members of the firm desired to obtain.

The Marshall & Huschart Machinery Company, Chicago, report their business as good as at any time recently, and in fact running a little beyond previous months. They perceive no falling off either in the demand or in prices. They remark that it is worthy of notice that while sales are running so large not one extensive outfit is included in the past month's business, but the demand is of a general nature, coming from all classes of machine tool users. Manufacturers are not catching up on deliveries.

Hill, Clarke & Co., Chicago, enjoyed a larger demand for machine tools in October than in September. This demand was of a general character, no particular trade and no special line being prominent, but all branches appearing in need of more tools. Jobbing machine shops are doing very well, showing that the general condition of the country is most excellent. They look for a much larger business next year. Manufacturers are behind in deliveries, but no further perhaps than they have been. Most of them have increased their facilities, enabling them to turn out a larger product.

J. B. Doan & Co., machine tools, Chicago, found their October orders of a scattered character, coming from large and small machine shops and from a great diversity of lines. They had a little business from bicycle manufacturers, but the bicycle factories are evidently well equipped for what they are doing and are not buying to any extent.

Chas. H. Besly & Co., Chicago, have done a larger business in October than in any other month this year. This statement applies as well to their trade in machinists' tools and machine shop and mill supplies as to their manufacturing department. They are six weeks behind orders in the factory. They are just shipping six of their largest sized Gardiner grinders to the East. They find the sale of machinery a very easy matter these days. Last week they shipped a miscellaneous lot of machinery and supplies to Bombay, India. They are also selling large quantities of taps, and trade in that line is increasing. They have met with some little trouble in getting supplies of material. Business is under strong tension, everybody wanting his orders filled almost as soon as he gives them. They do not believe that the present activity has reached anything like its culmination.

The Nordberg Mfg. Company, Milwaukee, Wis., report the machinery trade still very active. Among orders recently booked are two 19 and 35 by 36 cross compound engines for mining plants on the Mesaba range. The amount of work they are bidding on, or could bid on if

they were able to turn out work within reasonable time, would show that there is little if any slackening in the demand for machinery in their lines. They have had some trouble in getting prompt delivery of iron, and especially forged iron, but have not noticed as yet any particular shortage in labor.

The Stover Mfg. Company, Freeport, Ill., found trade during the month of October running even higher than any previous month this year. They are further behind in the filling of orders than ever before, not because they have been delayed in obtaining necessary materials, but the influx of business has been larger. Their customers are reporting regularly the loss of business through the company's inability to fill their orders promptly. They are now having considerable work done by outside parties, which has enabled them to increase their output. They are running overtime in their own factory in order to do as much business as their facilities allow, and it looks at this time as though the situation will be unchanged until after the holidays.

The Charter Gas Engine Company, Sterling, Ill., report business in the month of October as good as they have ever had it and in some particulars even better. They have booked and shipped several carload orders during the month, possibly breaking their record in this particular at least. They have had some difficulty in getting raw material in the line of bar iron and steel, but contracts on coke and pig iron have kept them from trouble. The supply of labor is not ample in their vicinity, but they never have any difficulty in getting all they want because of their running uniformly the year round and calling for a high class of labor.

The D. Clint Prescott Company, Menominee, Mich., report no slackening in the demand for their line of saw mill and mining machinery. In fact, it is on the increase. They have to look sharply after material to keep themselves supplied and note a deficiency in the supply of labor in their section.

Perry Ransom, manufacturer of machinery and tools, Oshkosh, Wis., says that trade for the month of October was considerably larger than for October of last year, probably 50 per cent. He has noticed no slackening up in the demand and does not look for any this winter. All orders taken are for regular grinding and polishing machinery. On account of the difficulty in obtaining coke much trouble is encountered in securing castings.

Bertsch & Co., manufacturers of shears, punches and bending rolls Cambridge City, Ind., have found business just as lively for the past month as for the several months just preceding. They are experiencing very little difficulty in getting raw material and are securing plenty of labor. From the present outlook they expect to have an abundance of work for the next several months.

The Gardner Governor Company, Quincy, Ill., say their trade for the month of October kept up exceptionally well, showing a larger volume of business than any preceding month of the year. They can see no slackening in the demand, but orders are continually coming in. The most notable contract received in the month was a duplicate order for a carload of pumps for export, the original having been received in the early part of August. They have had no difficulty up to the present time in getting supplies of raw material or of supplying their labor requirements.

The American Steam Pump Company, successors to the Battle Creek Steam Pump Company, Battle Creek, Mich., found the demand during October about the same as for the past year, with no indication of any slackening. They have business in hand to run their factory for six months. No difficulty is experienced in getting a sufficient supply of raw materials, although sometimes shipments of coke and pig iron are delayed on account of scarcity of cars. They report no scarcity of labor in their vicinity, although employment is easily found for all men who want to work.

The American Hoist & Derrick Company, St. Paul, Minn., see no probability of a decline in the demand for their product. The demand is much more active at this time than in any previous year, and relatively with the few preceding months it appears to be of substantially the same volume. The only exceptionally large contract they have taken during October is a 45-ton capacity and 85-foot radius locomotive crane for the United States Navy Yard at League Island, Pa., the contract price being $48,000. They are having some difficulty in getting crude materials, but it is not serious. The labor situation is in comfortable shape.

The H. W. Caldwell & Son Company, Chicago, report that the month has sustained the percentage of increase in the demand for conveying machinery that has been experienced during the past six months. A little falling off of trade is expected in the winter months, but they believe that although it may be lighter than now it will be considerably greater than for the corresponding months of last year. The question of getting supplies is largely one of paying the price asked for immediate delivery.

The Adams Company, Dubuque, Iowa, manufacturers of molding machinery, milling machines, &c., are having the largest business they ever had and it is increasing constantly. They have just received some large orders for shipment up to January 1. They find no difficulty in obtaining men to turn out the work they have on hand. They are enlarging their plant.

The Union Steam Pump Company, Battle Creek, Mich., report no change for the worse in regard to trade. Every one appears to wish to get under cover in advance of higher prices. Their business continues to increase, but the tendency is toward a feeling that higher prices will injure trade. Foreign correspondents say that they are simply ruinous. If higher prices are to become the fact the country must prepare for a harder time, eventually a panic and a shutting down of very many of the present industries.

The S. Freeman & Sons Mfg. Company, Racine, Wis., found business in October very good indeed, really better than expected early in the month. Among notable orders taken were 16 72 inch by 18 foot boilers for a Southern saw mill, also six 60 inch by 16 foot boilers for a saw mill near Seattle, Wash. They have received a large number of smaller orders, the whole aggregating, perhaps, the largest month's business the company ever had. They have experienced some difficulty in getting special material, such for instance as marine steel for boilers. The mills do not seem disposed to get out this kind of material. The supply of labor in their vicinity seems to be ample for all requirements. Sometimes it has to be looked up, but it can always be obtained.

The Morton Mfg. Company, Muskegon Heights, Mich., say that business has been exceptionally good. The works have been running to full capacity, with orders booked ahead for at least three months. They have had some difficulty in securing sufficient raw material, but have usually been able to anticipate requirements. They have had no difficulty in securing all the labor required. About 50 per cent. of their trade is export and the balance is mostly from the New England States.

The Manistee Iron Works Company, Manistee, Mich., report trade very good in October, particularly in the line of railroad car repair work. They have experienced no particular difficulty in getting raw material, except about 60 days' delay at times when they have wanted something special for shipment from rolling mills.

The Dodge Mfg. Company, Chicago, Ill., say they enjoyed an exceptionally nice trade the past month and have not found any slackening in inquiries and orders. Some of the contracts closed are as follows: With the Montana Pulp & Paper Company, Manhattan, Mont., a 600 horsepower rope drive from engine to main shaft in paper mill, the driving sheave on engine being included in contract, and is one of the Dodge Mfg. Company's special wood rim iron spider built up wheels, weighing about 15,000 pounds. From the main shaft in paper mill there is a smaller drive to rag and straw room. They are furnishing for the Wausau Paper Mill Company, Brokaw Station, Wis., shafting and power transmission and cable conveyor equipment for their sulphite plant. For the Fletcher Paper Company, Alpena, Mich., complete shafting and power transmission equipment for their pulp mill which they are building at Brodwell Dam, Mich. For the Pillsbury-Washburn Flour Mills Company, Minneapolis, Minn., to be installed at the "A" mill, four rope drives, two of 300, one of 250 and one of 175 horse power. For the Murray Iron Works, Burlington, Iowa, a complete electric light jack shaft equipment to be installed at Iowa Falls, Iowa. For Soudan Mfg. Company, Chicago, complete equipment of rope transmission machinery for their new plant at Elkhart, Ind. For the National Biscuit Company, Chicago, transmission machinery for their power house. For the Chicago Dock Company, Chicago, rope transmission and other machinery.

The Chicago Pneumatic Tool Company, Chicago, report that October business shows a still further increase, being nearly 100 per cent. greater than the corresponding month of 1898. This of course indicates an increase rather than any slackening in the demand for pneumatic tools. It is doubtless true that a considerable portion of their continued increase in business is due to the new appliances which they are continually bringing out, notable among which is their Boyer long stroke riveting hammer. This tool is claimed to be the most powerful pneumatic hammer yet brought out. Ten of these were put in use at the works of the Pressed Steel Car Company, and after a thorough trial under all sorts of conditions they have ordered 60 more of them, making 70 in all in use in one of their plants. Another of the principal sources of increased business is the great demand for pneumatic tools for ship building. These appliances are generally used in that line and particularly in riveting, as it has been demonstrated that all the rivets can be driven with pneumatic riveters much more rapidly and at a great reduction in cost over hand work. The general demand for pneumatic tools in all branches of manufacturing is good, in fact is on the increase, thus indicating that these tools are now installed among the chief of labor saving appliances.

The New Doty Mfg. Company, Janesville, Wis., found business good during the month of October, and are still

behind in their orders. They have had no trouble in getting material, as they have contracts for almost everything wanted for some months.

The Weber Gas & Gasoline Engine Company, Kansas City, Mo., state that their output is booked ahead for fully six months and the demand still keeps up. They recently closed a contract with an Arizona mining company for $20,000 worth of Weber gas engines, which is the largest order ever received from one company. Walter J. Sanford of London, who is interested in mines in New Zealand, visited Kansas City recently to buy machinery. He bought a 20 horse-power Weber gasoline engine hoist and other machinery of Kansas City make may follow.

J. H. Kerrick, Minneapolis, Minn., reports trade for October considerably larger than for the previous month. He has found it difficult to have orders for new machinery filled promptly and from this infers that no slackening is occurring in the demand for machinery. Most of the contracts he has taken have been on a cash basis on delivery of the goods, which shows that capital is ready for any good investment. The prospects for trade seem as bright if not brighter than ever.

Wickes Brothers, Saginaw, Mich., have noticed a slight slackening in the demand from the smaller purchasers, but a number of large orders received have amply made up for this. They have found a number of people who profess to be waiting for a drop in prices, which they hope will occur within a very few months, but the firm do not expect to see anything of the kind before the latter part of next year, if then. They have considerable difficulty in getting material. They have been supplied with pig iron, but bar iron and steel of some sizes are practically impossible to obtain. As an instance, they have wanted some 6 x 1 inch steel bars and have been unable to find any one who would enter the order for earlier delivery than next year, with no definite promise of date of shipment. This scarcity of material handicaps manufacturing operations and greatly increases costs, as more expensive makeshifts have to be resorted to. In the case mentioned they had to hammer out the bars from rounds they had in stock. The supply of labor—that is to say, skilled labor—is somewhat limited in their vicinity, and expert machinists, boiler makers and molders are difficult to obtain. Common labor, however, is plentiful, though no great number of idle men are seen. They are getting their large new boiler shop and power plant ready for operation.

The Filer & Stowell Company, Milwaukee, Wis., say that they are as busy as they can be. The demand for engines seems to be just as great as at any time during the year. They have experienced some difficulty in getting raw material, but so far have had no trouble in getting all the labor wanted, except that more good molders are needed than they have been able to secure.

J. J. Ryan & Co., brass founders and finishers, Chicago, report that the month of October has held its own in the way of trade, and in some departments made a gain over the two previous months. They have secured a number of orders for brass castings that will run from two to four months. One order was received for a special lot of brass fittings for a public building in Havana, Cuba, and another for a number of phosphor bronze castings weighing 1000 pounds each to be shipped South, but the most important gain was made in the babbitt metal department. Their sales of Nickel Genuine babbitt and 1 X L babbitt have increased enormously. In the metal polishing and nickel plating department they have been obliged to provide extra space in order to take care of the trade more expeditiously.

Robert Tarrant, general machinist and engine builder, Chicago, says that he has found no diminution in the amount of business offered in the past month and has had no great difficulty in getting supplied with either labor or material. While he has not been able to get pig iron and coke as he might desire, he has been able to run his plant to its full capacity.

The business of the Otto Gas Engine Works, Chicago, has been increasing considerably each month this year. They have just contracted for furnishing 11 water stations for one of the trunk lines, also a 40 horse special electric engine with 20 kw. generator and two electric hoists for a mining company at Chihuahua. Scattering orders have been considerable and they have difficulty in getting quickly all the necessary material to put in this work before winter sets in.

Pawling & Harnischfeger, Milwaukee, Wis., still find business in traveling cranes quite active and can see no appreciable slackening of the demand. Like all users of structural steel they have had considerable difficulty in getting reasonably prompt deliveries from Eastern mills, but as they placed orders some months ago for a large amount of stock material which is now coming in they are in a much better position in this respect than they have been. Among October orders they mention the following: One 25 ton electric crane, Fraser & Chalmers, London; one 12-ton electric crane, Warrior Machinery Company, Birmingham, Ala.; four 10 ton electric cranes, United States Navy Yard, New York; one 30 ton electric crane, Fraser & Chalmers, Chicago; one 45 ton electric crane, Havana Electric Company, Havana, Cuba; one 5-ton electric crane, Chester Rolling Mill Company, Chester, W. Va.; three 5-ton electric jibs, Midvale Steel Company, Philadelphia, Pa.; and one 10 ton electric crane, Greenslade Foundry Company, Milwaukee, Wis.

The Cleveland Machinery Market.

Office of *The Iron Age*, The Cuyahoga, }
Cleveland, October 27, 1899. }

With but few exceptions there is no noticeable decrease in the demand for machinery in this market. One or two manufacturers claim the pressure is letting up somewhat, but even in these cases it seems to be a demand for larger quantities and heavier machinery coming from fewer people. The manufacturers of machine tools located here and the agents for outside concerns all agree that the business is the heaviest ever known, and some of the pessimistical ones feel that there is too much of a good thing. They have men on the road and are maintaining extensive branch houses, yet have nothing to sell because of the impossibility to get goods out fast enough. In some cases, it is claimed, the demand for machinery amounts almost to a craze. Small manufacturers, who previous to this time have had a very limited business, are ordering additional or new equipments at a rate which makes a thoughtful person wonder what they propose doing with it. Some of them must be going too fast and the reaction caused by a surplus of manufactured articles will cause the slump to come only too soon. In the machine tool line it is said that the demand is almost uniform, although a number of people say the larger sizes are the most eagerly sought after. The larger sizes of turret lathes are almost out of the market and the prices offered for immediate deliveries in these goods are astonishing. An out of town manufacturer called on a local factory the other day and, seeing a turret lathe in their factory equipment which exactly suited his purpose, proceeded to bid for it. At $3275 the owner became excited and let it go; ordinarily the machine sold for $1600.

The rapidly developing automobile industry is especially catered to by several local concerns. The manufacturers in this line are all buying new equipments, some of them buying a great deal of automatic screw machinery for the production of their own small parts. The new enterprise seems to have wholly taken the place of the bicycle demand for machinery, which has been growing less during the past two or three years. At present the bicycle demand amounts to almost nil, nor do the manufacturers here share in the feeling that it will pick up again as soon as the bicycle consolidation has fully settled on its policy. The fact is, the bicycle factories have been overstocked with machinery and the unloading of this machinery, through failures and other causes, is believed by some to be accountable for the fact that the present demand for smaller sizes of machines is not on a par with the call for larger sizes. Bicycle manufacturers are now buying nearly all of their small parts from specialists, and many of these specialists produce their own machinery.

In the demand for machinery abroad there seems to be great activity in all European countries, also in China, Japan and India. Several Cleveland concerns report that many orders for automobile machinery are coming from France, while in Russia an especially strong demand is accounted for by the fact that many Russian and Siberian mines are being equipped with up to date appliances and provided with their own machine shops.

With such unprecedented demand for machinery right at their own doors it would seem that there would be an inclination on the part of manufacturers to dispense with such profit consumers as the jobbers and exporters, but on the contrary the orders placed through the middlemen are receiving just as good attention as though placed direct, the majority of manufacturers feeling that they must stand by their hitherto invaluable assistants; they will need them later, perhaps.

A rather peculiar feature of this seeming prosperity, which has been remarked by several local manufacturers, is that in some cases collections are rather poor. The purchasers are doing an excellent business, but they have so much capital tied up in raw material in anticipation of possible advances that they are hard pressed for cash.

Speaking of raw material, the majority of the local foundrymen seem to be taking better care of orders than heretofore. Except on very large orders deliveries are comparatively prompt. Tool steel in limited quantities is also easier, but the demand for crucible steel is far in excess of the supply and prompt deliveries are almost out of the question.

The general activity in all lines is best shown by the overwhelming demand for small tools, drills, reamers, &c. With some of these goods manufacturers are months behind on orders and find it impossible to keep stocks of their complete lines on hand.

Bardons & Oliver, manufacturers of screw machinery and screw machine parts, say they are enjoying a steady business calling for more than their capacity, but without the semblance of the boom which seems to have caught other manufacturers in similar lines. Much of their trade at present is with automobile manufacturers, and a number of these concerns are equipping their factories with the automatic screw machinery built by this company. Notable among these contracts is one for the complete equipment of the factory of the Locomobile Company of America. In fact the demand for automobile machinery seems to have almost wholly superseded the call for bicycle machinery enjoyed by this company in previous years. However, the demand for bicycle parts continues stronger than ever, and a recent increase in equipment will nearly double their capacity for bicycle and motor vehicle hubs and small parts. The foreign business of this company is increasing steadily, the demand for screw machines being especially strong in Russia and France, that of the latter country being accounted for by the rapid growth of the automobile industry. An important contract just made by this company calls for several screw machines of the largest size for the French government.

The Acme Machinery Company, manufacturers of bolt and nut machinery, are another firm who have been driven to expansion by the press of business. They are just preparing to move into a two-story brick addition 50 x 140 feet, which when in operation will nearly double their present capacity. During the past two or three weeks there has been a slight let up in the demand for machines, although not enough to permit them to make marked headway in catching up with orders. Just at present there is an unusual demand for bolt heading machines of the largest size for railway shop use. A number ranging from 18 to 24 tons in weight are now in process of construction, and one of the largest of these goes this week to a shop in Calcutta, India. Another of the largest size goes to a European railway. Several bolt and nut plants in various parts of this country are being wholly or partially equipped, notably a new bolt and nut plant in Pennsylvania, which has placed the contract for complete equipment with this company.

The Oster Mfg. Company are about 30 days behind on orders for their well known adjustable die stocks. Orders from the Western States are particularly large. Despite the increased cost of material and labor the company have announced no advance over their standard prices and probably will not do so unless in event of a still further advance in the cost of material.

For a new concern the Grant Machine Tool Works are rapidly forging to the front in the machine tool market. A machine which is bringing the company into great prominence and in which they are far behind on orders is the worm gear cutter designed by J. J. Grant, president of the company. This machine will generate a gear in less than 30 minutes where it formerly required several hours. Several of these machines have recently been shipped to Schuchardt & Schütte of Germany. The Standard Tool Company of this city recently placed an order for an equipment of taper turning lathes and within the past few days have doubled this order. It will take the Grant Company several months to complete this shipment. This concern also report a decided increase in the demand for machines and tools for motor vehicle factories. They have orders on hand enough to keep them running for six months and are contemplating withdrawing somewhat from the manufacture of small sized balls in order to expand their machine tool business. With the exception of a few 36 inch upright drills every machine on their floor or under process of construction has been contracted for. In the manufacture of large sized balls the company are also far behind on orders, steel balls now being used for purposes where they were hitherto unknown. Markt & Co. of New York have recently become foreign agents for the Grant Company and have placed a cash order for a sample of every article of machinery built by the concern. The line will be exhibited at the Paris Exposition.

The Cleveland Ball & Screw Company have been preparing to go into the manufacture of automatic screw machinery, but the difficulty in securing material, and more especially the unusual demand for large sized balls, has caused them to hold off until another season. The company are now producing balls up to 6 and 8 inches in diameter and report many large contracts from manufacturers of heavy machinery.

Until lately the Cleveland Stamping & Tool Company have built presses for the trade, but the addition of a new line of hollow ware and the increased demand for their stamped goods of all kinds have obliged them to turn the entire efforts of their machine shop to the manufacture of presses for their own work.

The Snyder-Hughes Company, manufacturers of pumping machinery and air compressors, are enjoying a trade which is far in excess of anything in their previous history. This is caused not only by the unusual demand for pumping machinery, but because of a trade connection recently made whereby the firm of McClave, Hamilton & Rimmer, New York, have become their Eastern representatives. A most important contract upon which they are now at work is for a 4,000,000 gallon compound condensing pumping engine for the Jamaica Water Supply Company of Jamaica, L. I. They are preparing to ship 50 pumps of various sizes to a firm in China. At Toledo a new dredge, the property of the Phœnix Dredging Company of New York, is being equipped with pumps.

According to the Cleveland Twist Drill Company the demand for drills is the largest ever known, with little or no variation in the call for the various sizes in their line. They are now making drills from a size equal to No. 80 wire gauge up to 6 inches in diameter, with occasional calls for 8-inch. They find it almost impossible to keep many sizes in stock, and without another order have enough business on hand to keep them busy for three months to come. Naturally they are looking forward with considerable impatience to the completion of their new factory building and power house, which will be ready for occupancy within the next 30 days. The new factory is 230 feet long and four stories high, and when fully equipped will give them a capacity of more than double their present output. The new power house is pronounced by George S. Ryder, the well known supervising engineer, to be the most complete and up to date plant of its kind west of Philadelphia. With its completion the power transmission of their entire plant will be changed to electricity, each department being operated by independent motors. The engine is the product of the Harrisburg Foundry & Machine Company, Harrisburg, Pa., while the boilers were furnished by Babcock & Wilcox Company of New York. The electrical equipment is being furnished by the General Electric Company.

With $30,000 worth of contracts on hand and with prospects of a record breaking season the Vulcanus Forging Company have again been thrown out of business by a disastrous fire. On May 31 their plant was wholly destroyed and the new establishment had been in operation only about 30 days when on Wednesday morning fire again broke out and the main building, 100 x 200 feet, was completely demolished. Secretary-Treasurer Hathaway stated that the loss was between $30,000 and $40,000, partially covered by insurance. The plant will probably be rebuilt at once. The office building was saved.

The Chisholm & Moore Mfg. Company report that their orders for cranes and chain hoists are far in excess of their capacity. They have just shipped three 10 ton pneumatic cranes to a Pittsburgh firm and are at work on one 5 ton pneumatic crane for a Cleveland concern, one 20-ton hand power crane which goes to West Virginia, one 10-ton pneumatic crane to Kentucky, one 15-ton hand power crane to Georgia, one 10-ton hand power crane to Montana and a 3-ton hand power crane to Pennsylvania. A catalogue describing their complete line, with current prices, has just been published.

W. D. Eastlake, a machinery dealer located at Tokio, Japan, has been in this city during the past week calling on machinery manufacturers. Among other connections made he placed a contract for a number of machine tools with the Grant Machine Tool Works, securing the Japanese agency for their line. He says that the missionary work done in his country during the past ten years is now developing and new industries of all kinds are springing up at an astonishing rate. American machinery and tools are in great demand. Mr. Eastlake is interested in a venture to buy up all the street railways in Japan and equip them according to American ideas.

In the description of the exhibit of the Crescent Steel Company of Pittsburgh at the National Export Exposition at Philadelphia reference was made to a small piece of steel shaped like a nutmeg that had been hardened 550 times, having been at one time 2 inches square. The fact is that the piece was originally 9-16 inch square and 3 inches long. It increased considerably in cross section and warped entirely out of shape, and decreased in length to less than one-half its original size.

The Republic Iron & Steel Company recently shipped from the cut nail factory of the Mahoning works, at Youngstown, Ohio, a carload of steel cut nails consigned to the United States Government at Manila, Philippine Islands.

Another iron and steel enterprise, to be known as the Gem Mfg. Company of Pittsburgh, will apply for a State charter on November 27. The incorporators are Wm. E. Frick, John A. Clark, Edwin S. Fownes, D. A. McCaffrey and W. D. Forsythe.

An explosion of gas at the Duquesne Steel Works of the Carnegie Steel Company, Limited, at Duquesne, Pa., occurred on Monday, October 30. Ten men were severely burned, and two of them may die.

HARDWARE.

Condition of Trade.

THERE is little change in the general situation. Trade is moving actively but with a slight lessening of the demand as the season advances, owing to the fact that retail merchants are generally well supplied with goods. Their orders are for the purpose of completing their stock, where especially depleted, or for seasonable goods, the purchase of which has been deferred. The business of the retail merchants, however, has been so good that more buying is necessary than is usually the case. The large crops, though not in all cases at especially high prices, and the fact that labor generally is employed at somewhat increased wages, are conditions which tend to make general business very satisfactory. The tone of the market continues strong and advances are constantly going into effect. A great many lines of Hardware are still relatively low and some of them are unchanged, manufacturers preferring to hold existing prices rather than advance, with the possibility of an early change in the upward trend of the market and a reaction from the high prices current. The strength of the Iron market, however, is such as to increase the confidence of the trade in the maintenance of high prices for some time, but there is no agreement among the best informed and most experienced men as to what the course of things will be next year. Many manufacturers have been increasing their facilities, but in this most of them have been delayed on account of the difficulty of obtaining machinery promptly, and in the turning out of goods are in a good many cases seriously hindered by their inability to get the raw material. Some of them who had large supplies of material at old prices have been giving the trade the benefit instead of advancing in sympathy with the movement of the market. When these stocks are exhausted higher prices must be announced. The tendency toward the formation of consolidations, pools or other combinations continues, and it is understood that the Chain manufacturers have formed a strong organization, as referred to in another column. There is a growing feeling on the part of the retail trade in opposition to these combinations, not simply in view of the popular objection to trusts, so-called, or on account of the high prices established, but because of the fact that they are in many cases so conducted that the system of prices adopted favors the jobbing trade at the expense of the retailers, and to a degree which has not previously been the case. Most of the combinations in these days of active business and advancing prices are experiencing little difficulty, as the conditions are so satisfactory as to make it an easy thing for them to work in harmony, but in nearly all lines in which there is such control of the market there is the development of outside competition, which promises to be a source of trouble before long. The high prices ruling and the abundance of capital which is in the hands of able and aggressive manufacturers whose plants have been sold to some of the existing consolidations, are facts which with the characteristic American energy tend to stimulate enterprises with the ultimate certainty of a greatly increased capacity for manufacturing. One gratifying feature of this condition is that when prices again reach a reasonable level this country will be in a splendid position to make goods for foreign markets and thus establish its commercial and manufacturing supremacy.

Chicago.

(By Telegraph.)

The Shelf Hardware trade continues active. The demand for seasonable goods keeps up well, while all kinds of Staple Hardware are selling freely. New business in staple lines in Metals and Tinners' stock is probably not so great as it has been, but jobbers are quite busy making shipments on orders previously taken. A heavy demand is just now observed for furnace goods. Galvanized Sheets are required for jackets and Coke Tin Plates for heat pipes. A particularly strong demand is also observed for Flue Stoppers, which is evidently caused by the substitution of furnaces for stoves. A very good trade is likewise reported in Roofing Plates, probably due to the rapid approach of winter, when it would be difficult to repair roofs. Heavy Hardware jobbers report October the biggest month they ever had, and prospects for a continued good trade as bright as at any time. Many consumers have not covered all their wants and are regularly drawing on jobbers' stocks. The Carriage Manufacturers' Convention at Indianapolis last week was largely attended by representatives of auxiliary branches of the trade from this section. They find the Carriage manufacturers had by no means covered their requirements for the season, and that a good trade is to be expected in that direction. A matter of interest to the trade generally is the advance just made on Western bound freight, which amounts to 3 cents per hundred on all kinds of Finished Iron and Steel, including Wire Nails.

St. Louis.

(By Telegraph.)

A few changes in price are noted this week. On November 1 a new list on Files went into effect, which figures up an advance of about 15 per cent. The discount is left unchanged. Augers and Bits were moved up in the neighborhood of 10 per cent. Cast Loose Pin Butts have also sustained about 10 per cent. advance. Galvanized Pump Chains now cost 1 cent more per pound. In Sheet Metal Goods, Galvanized Washtubs and Pails and Coal Hods were advanced slightly, the extent being about 5 per cent. However, Black Sheets remain about 3.50c. for No. 27, and Galvanized Sheets could be bought at 70 and 10 per cent. here out of jobbers' stocks to-day. Flax, Hemp and Jute Twine show advanced prices. Higher prices are also named on Wagon Covers and Tarpaulins. Blacksmiths' Tongs and Carpenters' Pincers, Wrought Padlocks, Clevises and Wood Saws also are mentioned among the articles to be sold at new figures. Conditions continue good and prices firm. Next season's business is looked upon as promising well. Quite a trade is keeping up in Builders' Hardware, and it is being bought for immediate use. Poultry Netting and Wire Cloth are being laid in freely for next season's trade. A fair business for the season is reported in Roofing Plates.

Baltimore.

CARLIN & FULTON.—Business continues comparatively good, especially in such lines in which, according to the judgment of the buyer, there is a speculative value; but apart from the question of possible advances the trade is rapidly appreciating the advantage of having goods in stock when wanted, instead of being annoyed by the inability of factories to make prompt shipment, as has been frequently the case this year in many of the staples.

The aggregated purchases of the railroads throughout the country of Steel Rails to the amount of probably 1,500,000 tons, at a price almost double that of a year ago, will have a most wonderful effect in maintaining during the coming year the high prices of raw material, followed necessarily by the enhancement in value of all manufactured goods. There are still quite a number of lines in a general stock of Hardware which are as yet quite low and seem not to have been affected by the extraordinary conditions of the general market. Cutlery of all kinds is undoubtedly cheap. Meat Cutters are still being sold at old prices. Saws and Files seem low and the discriminating buyer can easily select a number of articles in which he will show good judgment by anticipating his wants for some time to come.

During the month of November there will probably be somewhat of a lull in trade, as it is between seasons and the retail merchants are apt to be busy in turning the stocks bought earlier in the season, but all the conditions of the country at large seem to point to a good, active demand for goods in their proper seasons.

Cleveland.

THE W. BINGHAM COMPANY.—October trade closes with a volume that is very satisfactory. The orders show a general assortment, which indicates that the country merchants have been having a general good demand.

The Indian summer weather that has prevailed in this locality has retarded somewhat the sale of season goods, although sales up to this time are considerably ahead of those of last season, with the exception, perhaps, of Skates. There is considerable inquiry for goods to be delivered after the first of the year and some sales are being made for that delivery. As everything indicates, there will be no lowering of prices, at least over the first half of next year. The advance on Wire and Nails is being maintained generally in this locality, but the demand is not large.

Louisville.

W. B. BELKNAP & Co.—The market seems largely influenced by the entrance of the railroads as immense buyers. The earnings of the roads have been such as to justify great outlay, and it has been speedily taken advantage of. The most wonderful stories are afloat and in print of millions upon millions of tons which have been engaged for next year. These, added to a certain deficit for this year, make figures which would prove stunners had we not latterly become accustomed to such long rows of 000's after the initial digits, which suggests the succession of infinity of the mathematics of our boyhood, and nothing we have experienced before has equaled it except the astronomers' calculations of the distance of the fixed stars.

The article by President Hadley of Yale in the last *Scribner's* on the subject of trusts is most excellent and proper reading just at this time, when people are shouting for regulation by legal, or rather illegal, methods. It states very clearly what has been done, and what can be done, and what avenues are open for regulation and improvement. We heartily recommend this to our friends on both sides, whether statesmen, politicians or trust managers.

Omaha.

LEE-GLASS-ANDREESEN HARDWARE COMPANY.—The volume of business during October has run considerably ahead of that transacted during the same period last year.

Immense crops and good prices for live stock have placed the farming community in an independent position financially, so that the extravagant prices formulated by trusts and associations of manufacturers seem to have no effect on purchasers, and it is probable that this condition will continue to exist as long as producers have plenty of money. Trade in all branches is excellent. In many lines the demand is decidedly in excess of the supply.

The outlook is encouraging and we see nothing in the future just now that would indicate a diminution of the present excessive consumption.

Portland, Oregon.

CORBETT, FAILING & ROBERTSON.—There is no considerable change in the trade situation in this territory. Orders are coming forward freely enough to keep all on the move to avoid night work. Prices are fairly well maintained and advances as reported by manufacturers at once put into effect.

Two transports with troops have but lately sailed from this port for Manila, one here now being fitted up for transportation of mules and feed at a cost of over $30,000 to the Government, and seven more expected to sail later with troops and supplies, makes us feel that at last we are given proper consideration by the Government as the best port on the Pacific Coast for them to secure supplies and rendezvous troops preparatory for sailing.

Collections are not up to what they should be, as farmers in the interior do not like to sell when wheat brings them but 40 cents per bushel. Grain and hops, however, are in warehouses and make good security; when sold will make good trade.

New Orleans.

A. BALDWIN & Co.—Business has been unusually active in all lines, and the improved condition in the prices of the crops in this section of the country has been the means of creating somewhat of a boom in general business. Taking into consideration the advanced prices of nearly everything in the Hardware line, there has been an improvement of about 40 per cent. in the business this fall in comparison with 1897 or 1898.

Notwithstanding the quarantine troubles that we have been suffering under, the situation is so encouraging that we have almost forgotten that there were such things as quarantine regulations. The demand for goods in almost every department seems to be increasing, although we usually look for somewhat of a falling off in this demand during the month of November, but there are no indications of this falling off the present year.

Philadelphia.

SUPPLEE HARDWARE COMPANY.—Trade continues steady and can safely be looked upon as satisfactory; very little change is apparent in trade circles from week to week and, practically, from day to day. The season of the year has been reached when the retail merchant must have goods on hand to supply immediate wants before cold weather sets in on a line of goods such as building materials especially, and as the time is fast approaching for midwinter seasonable goods there is a manifest disposition to place orders for these. Thus far this fall we can see no apparent signs of restriction of consumption owing to present prices of building materials. Improvements that are begun are fast reaching completion, and within the last four days, although late in the season, new operations have been negotiated for, so the future course of that line of business cannot be looked upon as having been restricted, and, in our opinion, the course of business for the next six months to come is not likely to be hampered from present prices. Nothing is more indicative of this than the large orders given by railroads for steel rails and steel cars, which, it is estimated, will take a good proportion of the total output. Certainly the managers of these roads do not so conduct their business as to squander money at present prices if lower prices in the near future appeared

to them possible. The continued activity in pig iron, as well as rails and structural iron, must have a stiffening effect (if nothing further) on general lines of Hardware and its correlatives which pass through the hands of the jobbing trade of the country. The merchandise export of iron and steel and products from these two articles has not thus far diminished at present prices. The eagle eye of the manufacturer who seeks export trade is sufficiently alert, we think, to let no business in that direction pass. These facts are beginning to be realized by the retail merchant, and unless it be immediately after the advance in price on some one article there is comparatively little heard of existing prices in comparison with those of six months ago, when prices were not so high as now.

Notes on Prices.

Wire Nails.—Conditions existing in the Wire Nail market remain the same as noted in our report last week. The season for a large distribution of Nails is about drawing to a close, and orders are principally for early requirements, but in view of the recognized strength of the market merchants are liberal in anticipating their needs. Quotations are as follows, f.o.b. Pittsburgh, terms, 30 days net:

To jobbers in carload lots	$2.95
To " in less than carload lots	2.97½
To retailers in carload lots	3.10
To " in less than carload lots	3.20

Jobbers, as a rule, are not holding to card prices, owing to stocks purchased at lower figures.

New York.—Local requirements are satisfactory for the season but demand is not as large as earlier in the year. There is some irregularity in this market in prices of small lots of Wire Nails from store, as stocks in jobbers' hands were bought at lower prices. The following quotations fairly represent the market:

To retailers, carloads on dock	$3.25
To " less than carloads on dock	$3.30 to 3.40
Small lots from store	3.35 to 3.45

Chicago, by Telegraph.—The Wire Nail trade appears to be in healthy condition. Manufacturers have a good volume of business, and jobbers state that a free demand is coming from the retail trade. The advance of 3 cents per keg on west bound freight rates causes the addition of that amount to Western prices. Single carload lots are therefore quoted on the basis of $3.28, Chicago, and small lots from stock at $3.38.

St. Louis, by Telegraph.—Sales are keeping up well at the following prices: Single carload lots to retailers, $3.30, St. Louis; small lots, $3.40.

Pittsburgh.—We continue to report a good demand for Wire Nails, but in many cases buyers are restricting purchases to immediate requirements only. Old contracts placed some time since at lower figures, together with orders at current prices, serve to keep the mills fully employed. We quote f.o.b. Pittsburgh, terms 30 days net cash:

To jobbers in carload lots	$2.95
To " in less than carload lots	2.97½
To retailers in carload lots	3.10
To " in less than carload lots	3.20

Cut Nails.—The condition of the Cut Nail market remains practically unchanged. Demand continues in about the usual volume for this season. Quotations in Eastern territory are as follows, f.o.b. Pittsburgh, freight being added to point of destination:

To jobbers in carload lots	$2.60
To " in less than carload lots	2.65
To retailers in carload lots	2.70
To " in less than carload lots	2.85

Some irregularity exists in prices among jobbers, owing to lower price stocks.

New York.—The local Cut Nail market continues in about in its former condition. Prices are not uniform, and quotations for single carloads on dock are about $2.65 to $2.70. Small lots from store are held at $2.75 to $2.80.

Chicago, by Telegraph.—The demand is fair, and jobbers continue to quote small lots from stock at $2.80.

St. Louis, by Telegraph.—Regular trade is moving at the unchanged price of $2.85, base, out of jobbers' stock.

Pittsburgh.—There is only a fair demand for Cut Nails, and the tone of the market is not as strong as it has been. We quote Cut Nails at $2.50 in carload lots, f.o.b. at mill, Wheeling. It is stated that for desirable orders some mills would shade this price.

Barb Wire.—The market remains strong at former quotations, with a limited demand for domestic requirements. Quotations for domestic trade are as follows, f.o.b. Pittsburgh, net cash, 30 days:

To jobbers in carload lots, Painted	$3.40
" " Galvanized	3.55
" in less than carload lots, Painted	3.42½
" " " " Galvanized	3.57½
To retailers in carload lots, Painted	3.55
" " Galvanized	3.70
" in less than carload lots, Painted	3.65
" " " " Galvanized	3.80

Chicago, by Telegraph.—The situation is about as previously reported. Plain Wire is in strong demand, with the usual season trade in Barb Wire. Prices have been advanced 3 cents per 100 pounds, owing to the advance just made in west bound freight rates, and are now as follows: Single carloads of Plain Annealed Wire, $3.13; Painted Barb Wire, $3.73; Galvanized Barb Wire, $3.88. Jobbers ask 10 cents per 100 pounds more for small lots.

St. Louis, by Telegraph.—A fair business is being recorded for the season at $3.75 for Painted, in single cars, and $3.85 for broken cars, with 15 cents additional for Galvanized.

Pittsburgh.—A good deal of Barb Wire is being sold for export, but domestic demand is very light. We quote at $3.40 for Painted in carload lots to jobbers and $3.65 in less than carload lots, with an advance of 15 cents for Galvanized, all f.o.b. Pittsburgh, terms 30 days net cash.

Smooth Wire.—Quotations on Smooth Wire remain unchanged. Demand continues large. Quotations are as follows, f.o.b. Pittsburgh, terms, 30 days, net cash:

To jobbers in carload lots	$2.80
To " in less than carload lots	2.82½
To retailers in carload lots	2.95
To " in less than carload lots	3.05

Pittsburgh.—There is a good demand, and the tone of the market is strong. The tonnage in Smooth Wire this year has been far ahead of any previous year in the history of the trade. The export demand is good, and foreign shipments are being made right along. The tone of the market is strong, and we quote: To jobbers in carload lots, $2.80; to jobbers in less than carload lots, $2.82½; to retailers in carload lots, $2.95; to retailers in less than carload lots, $3.05, all f.o.b. Pittsburgh; terms, net 30 days. The charge for galvanizing is 50 cents on sizes from Nos. 6 to 14 inclusive; on Nos. 15 and 16, 85 cents, and on Nos. 17 and 18, $1.10.

Hobart B. Ives & Co.—Hobart B. Ives & Co., New Haven, Conn., under date, November 1, issue the following revised discounts on Hardware manufactured by them, as shown in their catalogue No. 10, terms, 60 days net, or 2 per cent. discount for cash in 10 days:

	Discount. Per cent.
Window Ventilating and Mortise Door Bolts	60
Sash Locks, Wrought Steel, with Bronze Metal Knob	60
" " " Bronze and Brass Metal	55 and 5
" " Cast Iron, also with Bronze " Knob	65
" " " Bronze and Brass Metal	62½
Window Stop Adjusters	25 and 5
Sash Lifts, Wrought Metal	40
" " Cast, and Shutter Bars	45

Chain.—It is understood that the negotiations which have for some time been progressing with a view to uniting the interests of the manufacturers of Chain have been successfully concluded. Particulars are not, however, announced, but there are indications that the result will be a strong organization which will to a good extent control the market.

Files.— We print herewith a revised list adopted by the File Manufacturers' Association under date of November 1. This new list has been adopted, we are advised, to correct some confusion which has existed and to keep the discounts unchanged notwithstanding the advances necessary on account of the increased cost of the raw material. It will be remembered by the trade that the last list went into effect June 1, and that a 10 per cent. advance was announced by the manufacturers August 23. There has not been entire agreement in the quotations of the manufacturers since that time, some advancing the list prices and others diminishing the discount. It will be observed that at the discounts which have been prevailing the new list embodies a further advance beyond the August price of 5 to 10 per cent. The manufacturers are not entirely agreed in regard to the advisability of this change of list, and the trade generally will regret that it has been deemed necessary. Most of the manufacturers are fully occupied on orders, and the tone of the market, in view of the increased cost of material, is firm. The new list given herewith is in the form in which it appears in *The Iron Age* Standard Hardware Lists. It is in a general way subject to the same discounts as have been prevailing.

Mrs. Potts' Sad Irons.— This is one of the lines on which there continues to be a good deal of irregularity, owing to the radical advances which have been made and the extensive purchases of the jobbers at lower prices than are now ruling. They are thus in a position to undersell the manufacturers, some of whom express themselves as waiting until the stocks in their customer' hands are depleted.

Hay-Budden Anvils.— Hay-Budden Mfg. Company, Brooklyn, N. Y., announce, owing to the continued increase in the cost of Iron and Steel, fuel, &c., and their consequent inability to renew terminating contracts except at considerably higher prices, that they are obliged to advance the price of their Anvils ½ cent per pound.

The Storm Mfg. Company.— The Storm Mfg. Company, Newark, N. J., have withdrawn previous quotations on their goods and issue a 1900 catalogue and price-list describing the line of Dumb Waiters and Elevators which they are putting on the market.

Augers and Bits.— A meeting

Revised File List, Nov. 1, 1899.

Inch.	Flat. Bastard.	Flat. 2d Cut.	Flat. Smooth.
4	3.70	4.30	4.70
5	3.90	4.60	4.90
6	4.30	4.80	5.30
7	4.80	5.50	6.10
8	5.30	6.10	6.60
9	6.30	7.20	7.90
10	7.00	8.10	8.70
11	8.60	9.80	10.70
12	9.70	11.00	12.10
13	11.80	13.60	14.70
14	13.30	15.30	16.70
15	16.00	18.30	20.00
16	17.80	20.10	22.30
17	21.50	24.20	26.50
18	23.90	26.80	29.20
19	28.40	31.60	34.60
20	31.50	35.30	38.30

Cant (Blunt) Dbl. Cut, advance 2 in.

Inch.	Square. Bastard.	Square. 2d Cut.	Square. Smooth.
4	3.80	4.60	4.90
5	4.10	4.80	5.30
6	4.60	5.10	5.50
7	5.10	5.80	6.30
8	5.50	6.30	7.00
9	6.60	7.70	8.30
10	7.40	8.50	9.10
11	9.10	10.40	11.30
12	10.20	11.50	12.80
13	12.50	14.30	15.40
14	13.90	16.10	17.50
15	16.90	19.20	20.90
16	18.70	21.20	23.30
17	22.50	25.40	27.50
18	25.10	28.20	30.40
19	29.70	33.20	35.70
20	32.80	36.70	39.30

Square Blunt, advance 1 in.

Inch.	Mill and Round. Bastard.	Mill and Round. 2d Cut.	Mill and Round. Smooth.
4	3.00	3.50	3.90
5	3.20	3.80	4.10
6	3.50	4.00	4.50
7	3.90	4.60	4.90
8	4.30	4.90	5.40
9	4.90	5.80	6.30
10	5.60	6.40	7.00
11	6.70	7.80	8.50
12	7.50	8.60	9.40
13	9.40	10.70	11.70
14	10.70	12 20	13.10
15	13.10	15.00	16.10
16	14.70	16.80	17.90
17	18.20	20.20	21.70
18	20.20	22.70	24.30
19	24.60	27.50	29.40
20	27.40	30.70	32.90

Mill Blunt, Dbl. Cut, adv. 2 in.
Mill Dbl. Cut, " 1 in.
Mill Narrow Point, " 1 in.

Tapers, Warding, &c.

Inch.	Tapers. Single Cut.	Tapers. Double Cut.	Slim Tapers. Single Cut.	Slim Tapers. Double Cut.	Band Saw Blunt and Taper. Regular.	Band Saw Blunt and Taper. Slim.
3	2.10	2.50	2.10	2.50	2.50	2.50
3½	2.10	2.50	2.10	2.50	2.50	2.50
4	2.20	2.90	2.20	2.60	2.90	2.60
4½	2.40	3.10	2.30	3.00	3.10	3.00
5	2.60	3.50	2.50	3.20	3.50	3.20
5½	3.00	4.00	2.90	3.50	4.00	3.50
6	3.40	4.70	3.10	3.90	4.70	3.90
7	4.30	5.60	3.80	4.50	5.60	4.50
8	5.40	6.70	4.50	5.30	6.70	5.30
9	6.60	8.10	5.40	6.30	8.10	6.30
10	8.10	9.70	6.40	7.50	9.70	7.50
11	10.70	12.10	8.30	9.10	12.10	9.10
12	12.50	14.70	9.50	11.00	14.70	11.00
13	15.90	17.50	12.10	13.10	17.50	13.10
14	18.20	20.60	13.80	15.40	20.60	15.40

Inch.	Pit Saw. Single Cut.	Cant Saw. Single Cut.	Cross Cut. Single Cut.	Hook Tooth. Single Cut.	Planer Knife. Single Cut.	Inserted Tooth or Chisel Tooth.
4	4.80	4.30	4.80	.....	.....	.....
5	5.40	4.70	5.40	.....	.....	.....
6	6.10	5.40	6.10	6.70	.....	.....
7	7.00	6.10	7.00	7.70	.....	.....
8	7.50	6.40	7.50	8.30	6.40	8.30
9	8.50	7.80	8.50	9.40	.....	9.40
10	9.10	8.70	9.10	10.10	8.60	10.10
11	10.70	10.40	10.70	11.80	.....	.....
12	11.80	11.40	11.80	13.00	12.10	.....

Climax, adv. 2 in. on Hlf. Rd. Bastard.
Round Gulleting, take Pitsaw price.

Double Ended Taper.

Inch.	6	7	8	9	10
	3.50	3.50	3.90	4.40	4.90

Inch.	Half Round and Three Square. Bastard.	Half Round and Three Square. 2d Cut.	Half Round and Three Square. Smooth.
4	4.80	5.60	6.10
5	5.40	6.10	6.40
6	6.10	6.70	7.10
7	7.00	7.70	8.20
8	7.50	8.30	8.90
9	8.50	9.40	9.90
10	9.10	10.10	10.70
11	10.70	11.80	12.70
12	11.80	13.00	13.90
13	14.10	15.40	16.60
14	15.50	17.00	18.30
15	18.50	20.40	21.70
16	20.60	22.50	24.20
17	24.70	27.00	28.90
18	27.50	29.90	32.00
19	32.80	35.70	38.10
20	36.20	39.40	42.30

Gin Saw, take Bastard price.
Crossing, adv. 2 in.
Tumbler, " 2 "
Feather Edge (Blunt), " 2 "
High Back, " 2 "
Half Round, " 2 "

Inch.	Warding. Bastard.	Warding. 2d Cut.	Warding. Smooth.
4	4.00	4.80	5.40
5	4.50	5.30	5.80
6	4.90	5.90	6.40
7	5.90	6.90	7.50
8	6.40	7.50	8.20
9	7.80	9.00	9.90
10	8.70	10.10	11.00
11	10.90	12.70	13.70
12	12.30	14.30	15.40
13	15.20	17.40	18.70
14	17.00	19.40	21.00

EXTRAS (General).

Sizes below 4 inches, not extended, take 4-inch price.
Half inches not specified, take next higher full inch price.
Dead Smooth, double the price of Bastard Cut.
One Round Edge, advance 12½ per cent.
All lengths above those listed, advance 20 per cent. on next lower inch price.
Cuts not specified, made upon regular blanks, advance 1 inch on respective kinds and nearest cut.

Blunt Files not specified, advance 1 inch on respective kinds and cuts.
Single or Float Cut not specified, on regular shapes take Double Cut price.
Equalizings (Bellied), advance 2 inches on respective kinds and cuts.
Two Round Edges, advance 25 per cent.
Files varying from standard sizes, subject to special prices.

of practically all the manufacturers of Augers and Bits was held in New York last week. The result has been a further advance in price on account of the increased cost of the raw material. The new prices are referred to as firmly maintained and the market in this line as more regular than heretofore. On account of the condition of the Steel market, manufacturers are conservative about accepting orders for future delivery.

Glass.— The prevailing impression appears to be that a general resumption of Glass making by the American Window Glass Company and factories which will work in harmony with them will not take place before December 1. Manufacturers' prices remain unchanged. Eastern jobbers are quoting 80 and 10 per cent. discount on less than carload lots of Glass, with light demand.

Paints and Colors.— *Leads.*— New business is showing a falling off incident to the season, but grinders are busy on contract deliveries. Red Lead and Litharge are in limited demand. The market for White Lead in Oil is firm at former quotations, as follows: In lots of less than 500 pounds, 6½ cents; in lots of 500 pounds and over, 6 cents.

Oils.— *Linseed Oil.*—There has been no apparent change in the condition of the Linseed Oil market during the past week. The general price of City Raw is from 44 to 45 cents, according to quality, though one brand is still held 2 cents higher. State and Western Oil is quoted at 44 to 45 cents per gallon. New business is of an ordinary character.

Spirits Turpentine.— The Turpentine market has been subject to fluctuations of ¼ to ½ cent per gallon during the past week, but was held at about 51½ cents for Southerns and 52 cents for machine made barrels, these being present quotations. Business is largely confined to small lots.

Millers Falls Company.— Millers Falls Company, 28 Warren street, New York, and Millers Falls, Mass., have announced the following revised discounts on Vises of their manufacture, an extra 10 per cent. being obtainable by the larger trade:

Oval Slide Vises.

2 in.	2½-in.	3-in.	3½-in.	4-in.	4½-in.
$1.10	$1.45	$1.95	$2.45	$3.25	$4.20

Mechanics' Vises.—Each.

1¾-in.	2-in.	2½-in.	3-in.	3½-in.	4-in.	4½-in.	5-in.
$1.52	$2.00	$3.00	$4.75	$5.25	$6.50	$7.50	$9.00

Oval Slide Coach Vises.....40 and 10

Mechanics' Swivel Vises.—Each.

3-in.	3½-in.	4-in.	4½-in.
$5.60	$6 50	$7.50	$8.50

American Tool Chest Company.— American Tool Chest Company, 200 West Houston street, New York, have issued the discount sheet given below in connection with their new catalogue, No. 19. The catalogue of nearly 50 pages shows the extensive line of Tool Chests adapted for the use of boys, youths, gentlemen, housekeepers, carpenters, farmers, planters, railroads and mines, which the company are manufacturing, the Chests being referred to as fitted up complete with a superior

Revised File List, Nov. 1, 1899 (Concluded).

Inch.	Horse Rasps. Plain.	Horse Rasps. Beveled and ¾ Rasp.	Horse Rasps. Tanged.	File Rasps. Flat.	File Rasps. Half Round.
6	.....	.....	.....	7.40	8.10
7	.....	.....	.....	8.60	9.30
8	.....	.....	.....	9.40	10.10
9	.....	.....	.....	11.40	12.20
10	9.40	10.70	12.80	12.80	13.70
11	11.40	12.90	15.20	15.50	16.80
12	12.80	14.40	16.80	17.50	18.70
13	15.20	17.00	19.60	20.90	22.40
14	17.80	20.10	23.10	23.20	24.80
15	20.90	23.60	27.30	27.80	29.70
16	24.40	27.50	32.20	30.80	32.90
17	28.90	31.50	.....	36.20	38.90
18	32.90	36.20	.....	40.90	43.60

Inch.	Wood Files. Flat.	Wood Files. Half Round.	Wood Files. Cabinet.	Wood Rasps. Flat.	Wood Rasps. Half Round.	Wood Rasps. Cabinet.
6	4.30	6.10	8.10	7.40	8.10	10.10
7	4.80	7.00	9.30	8.60	9.30	11 70
8	5.30	7.50	10.10	9.40	10.10	12.80
9	6.30	8.50	12.20	11.40	12.20	15.50
10	7.00	9.10	13.70	12.80	13.70	17.50
11	8.60	10.70	16.80	15.50	16.80	20.70
12	9.70	11.80	18.70	17.50	18 70	22.80
13	11.80	14.10	22.40	20.90	22.40	26.80
14	13.30	15.50	24.80	23.20	24.80	29.60
15	16.00	18.50	29.70	27.80	29.70	33.90
16	17.80	20.60	32.90	30.80	32.90	36.90
17	21.50	24.70	38.90	36.20	38.90	42.40
18	23.90	27.50	43.60	40.90	43.60	46.90

Inch.	Shoe Rasps Flat.	Shoe Rasps Half Round.	Shoe Rasps Oval.
6	8.10	8.10	9.30
7	9.30	9.30	10.10
8	10.10	10.10	12.20
9	12.20	12.20	13.70
10	13.70	13.70	16.80
11	16.80	16.80	18.70
12	18.70	18.70	22.40
13	22.40	22.40	.....
14	24.80	24.80	.....

Last Makers' Rasps.
1 in. advance on Cabinet Rasp.

	Stave Saw.
8	$9.40

	Stave Saw Improved.
6	$6.40
7	7.40
8	8.10
9	9.70
10	10.70
12	15.40

Inch.	Hand and Pillar. Bastard.	Hand and Pillar. 2d Cut.	Hand and Pillar. Smooth.
4	3.70	4.30	4.80
5	3.90	4.70	5.30
6	4.30	5.10	5.60
7	4.90	5.80	6.30
8	5.40	6.30	6.70
9	6.70	7.80	8.30
10	7.50	8.70	9.40
11	9.40	10.90	11.80
12	10.70	12.30	13.50
13	13.30	15.20	16.20
14	15.00	17.00	18.20
15	17.90	20.60	21.70
16	20.10	22.80	24.20
17	24.20	27.10	28.60
18	26.80	29.90	31.50
19	31.90	35.40	37.60
20	35.10	39.20	41.60

Slotting (Blt.) **advance 2 in.**
Cotter Blunt or Taper, **advance 2 in.**

Inch.	Knife. Bastard.	Knife. 2d Cut.	Knife. Smooth.
4	5.40	6.10	6.40
5	6.10	6.70	7.10
6	6.90	7.50	7.90
7	7.80	8.50	8.90
8	8.50	9.10	9.50
9	9.40	10.60	11.30
10	10.10	11.50	12.30
11	12.20	13.70	14.60
12	13.70	15.20	16.10
13	16.30	17.90	19.20
14	18.20	19.90	21.20

For General Extras see preceding page.

Inch.	MILL. One Round Edge. Bastard.	MILL. One Round Edge. 2d Cut.	MILL. One Round Edge. Smooth.	MILL. Two Round Edges. Bastard.	MILL. Two Round Edges. 2d Cut.	MILL. Two Round Edges. Smooth.
4	3.40	3.90	4.40	3.80	4.40	4.90
5	3.60	4 30	4.60	4.00	4.80	5.10
6	3.90	4.50	5.10	4.40	5.00	5.60
7	4.40	5.20	5.50	4.90	5.80	6.10
8	4.80	5.50	6.10	5.40	6.10	6.80
9	5.50	6.50	7.10	6.10	7.30	7.90
10	6.30	7.20	7.90	7.00	8.00	8.80
11	7.50	8.80	9.60	8.40	9.80	10.60
12	8.40	9.70	10.60	9.40	10.80	11.80
13	10.60	12.00	13 20	11.80	13.40	14.60
14	12.00	13.70	14.70	13.40	15.30	16.40
15	14.70	16.90	18.10	16.40	18.80	20.10
16	16.50	18.90	20.10	18.40	21.00	22.40
17	20.50	22.70	24.40	22.80	25.30	27.10
18	22.70	25.50	27.30	25.30	28.40	30.40

quality of Tools. The catalogue also lists Empty Tool Chests. The discount sheet is as follows, terms 30 days net, or 2 per cent discount for cash in 10 days:

Tool Chests, Complete with Tools.

	Discount. Per cent.
Boys' Chests, Nos. 55 to 0½, inclusive	50
Youths' Chests, Nos. 2A, 1A to 4, inclusive	40
Gentlemen's Chests, Nos. 4½ to 6½, inclusive	30
Farmers', Planters', Railroads', Mines' and Carpenters' Chests, Nos. 7 to 13, inclusive	20
Housekeepers' Chests, Nos. 550 and 750, inclusive	50
Gentlemen's Chests, No. 400, and Gentlemen's Chest with Drawer, No. 500	50
Boys', Youths' and Gentlemen's Eureka Chests, Nos. 122 to 215 and 20 to 25, inclusive	50

Empty Tool Chests.

Youths', Nos. 2A, 1A to 4, inclusive	40
Gentlemen's, Nos. 4½ to 6½, inclusive	30
Farmers', Planters', Railroads', Mines' and Carpenters' Chests, Nos. 7 to 13, inclusive	20
Machinists', Nos. 350 and 450, inclusive	50
Pipe Fitters', Nos. 1 and 2, inclusive	50

National Hardware Association.

THE original plans for the entertainment of members of the National Hardware Association at Pittsburgh on November 15, 16 and 17 have been somewhat modified, and it is now announced that the members of the association will be guests of the Pittsburgh manufacturers at a banquet to be given on Friday evening, 17th, at the Hotel Schenley. It was originally planned that the National Hardware Association would give the banquet at the Monongahela House.

It has also been decided that the smoker to be given in the Monongahela House, on Wednesday evening, November 15, will not be given, but in its stead a reception will be tendered to members of the association and visiting manufacturers at the Duquesne Club, on Wednesday evening, November 15.

Some of the largest Hardware concerns in the United States, that have been buying goods from Pittsburgh manufacturers for years, have never had the opportunity of meeting the heads of such firms as Jones & Laughlins, Carnegie Steel Company, Oliver Iron & Steel Company and others, and it is expected that such men as B. F. Jones, Sr., Henry W. Oliver and other large manufacturers will attend this reception, and an opportunity be given the members of the association to meet them. There will be no set speeches, but a light lunch will be served and the evening will be spent in social intercourse.

It has also been planned that on Thursday evening, November 16, a special train will leave on either the Baltimore & Ohio or Pennsylvania Railroad for Bessemer, where an opportunity will be given to visit the rail mill and blast furnaces of the Edgar Thomson Steel Works at night. This is the largest rail mill in the country, and no doubt many members of the National Hardware Association who have never seen the process of rail manufacture from Pig Iron to the finished product will find the trip an interesting one.

The Reception Committee appointed by the Pittsburgh manufacturers is as follows:

Henry B. Lupton, *Chairman*,
American Steel & Wire Company.
George T. Oliver,
Oliver & Snyder Steel Company.
Willis L. King,
Jones & Laughlins, Limited.
Albert M. Crane,
American Steel & Wire Company.
Homer J. Lindsay,
Carnegie Steel Company, Limited.
John A. Sutton,
Park Steel Company.
Joseph R. Dilworth,
Dilworth, Porter & Co., Limited.
Wallace H. Rowe,
American Steel & Wire Company.
Chas. L. Gilpin,
W. Dewees Wood Company.
W. B. Rhodes,
National Tube Company.
Thos. W. Smith,
Pittsburgh Screw & Bolt Company.
C. C. Briggs,
Jones & Laughlins, Limited.
A. M. Byers, Jr.,
A. M. Byers & Co.
George V. Willson,
Hussey, Binns & Co.
Frank W. Severance,
Samuel Severance.
W. C. Cronemeyer,
American Tin Plate Company.
Chas. A. Painter,
American Steel Hoop Company.
H. E. Tener, Jr.,
Carnegie Steel Company, Limited.
T. Howe Childs,
Howe, Brown & Co., Limited.
Wm. C. McMahon,
Oliver Iron & Steel Company.
Joseph L. Cooper,
J. C. Russell Shovel Company.
George S. Garritt,
National Tube Company.
S. A. Rankin,
Hubbard & Co.
F. I. Illenberger,
American Steel Hoop Company.
Frank C. Neale,
Carnegie Steel Company, Limited.

The following are the members of the manufacturers' Executive Committee:

Frank L. Clark.
Roland Gerry.
Robert Garland.
John W. Hubbard.
Wm. L. Hirsch.
Wm. H. Hays.
Philip Mathes.
W. S. McKinney.
Jas. B. Oliver.
John C. Oliver.
P. F. Smith.
Stephen W. Tener.
Edward Worcester.

The Wednesday morning and Thursday afternoon sessions of the convention will be open ones and manufacturers and other visitors and members of the press are invited to participate. A collocution will be held on both of these occasions, the subject for Wednesday morning being "These Changed Conditions—Are They Likely to Be Permanent?"

Arrangements have been made by which the railroad companies will return all delegates and visitors to their homes for one-third of the fare paid in going to the convention, provided a certificate is presented duly countersigned. These certificates must be obtained at the time of the purchasing of the railroad ticket. All the delegates and visitors are requested to obtain these certificates, as it is necessary to have 100 presented to the railroad commissioner before the reduced rate becomes operative.

It is evident that the attendance of outside manufacturers at the Pittsburgh convention will be very much larger than ever before at any of the meetings. Requests for hotel accommodations have been received by the committee in very large numbers, and some of the largest manufacturing houses are sending as many as six representatives. The various committees that have the convention in charge in Pittsburgh are meeting frequently, and their plans are about perfected for giving to the visiting members of the National Hardware Association a very pleasant time, and they will no doubt remember their visit to Pittsburgh with extreme pleasure for many years.

THE TRADE will observe the page advertisement of Cary Mfg. Company, 19 and 21 Roosevelt street, New York, in which they conspicuously state that while there has been an advance of over 100 per cent. in prices of Band Iron since January 1, they have advanced their Universal Box Strap only 10 per cent. since that date. Having been fortunate, they advise us, in making very large contracts for raw material the first of the year, they have given their trade the benefit of it to a very large extent. They refer to the volume of business as almost double that of last year, having received many orders from concerns not formerly using their goods.

Louisville Retail Hardware and Stove Dealers' Association.

THE retail Hardware and Stove merchants of Louisville, Ky., have been conferring with a view to forming an association, and the work was formally consummated at a meeting held on Friday last, 27th ult., when officers and committees were elected. This meeting was convened in accordance with the following circular, issued by Samuel B. Korb of Korb Hardware Company, temporary secretary:

Inclosed you will please find the constitution and by-laws of the Retail Hardware and Stove Dealers' Association.

First.—This association is formed for the express purpose of creating a friendly feeling among the dealers in competing lines.

Second.—To mutually agree as to the most suitable time to close.

Third.—To devise ways and means as to how the retail Hardware and Stove business can be conducted at a better profit.

Fourth.—To discourage as much as possible the manufacturers and jobbers from catering to that trade which properly belongs to the retail dealers.

Fifth.—To keep a record of undesirable customers and furnish same to members only.

Sixth.—Last but not least, to promote a social feeling among the Hardware and Stove dealers, and at stated periods provide entertainments, &c., to be attended by the members with their families and friends.

Please consider this a special invitation to you to become a member.

The fee is only $3 for the year.

The next meeting will be held at Liederkranz Hall, corner Sixth and Walnut streets, at 8 o'clock p.m., Friday, October 27. The election of officers will be held at this meeting and new members will be accepted.

At this meeting the following officers and committees were elected:

Paul Wagner, president.
Henry Heick, first vice-president.
Wm. Hinkle, second vice-president.
Samuel B. Korb, secretary.
Geo. Dehler, treasurer.
Executive Committee: Jos. Knapp, Phil. Ernwine, Wm. Dehler, B. Vogt, E. Speckman.
Grievance Committee: Wm. Hill, Henry Nieder, Wm. Stockhoff.

We are advised that the association has already enrolled as members some of the best houses in Louisville, with good prospects of getting the others, and has thus commenced its good work under encouraging auspices.

The following are the constitution and by-laws which have been adopted by the association:

ARTICLE I.

Section 1. The name of this organization shall be the Louisiana Retail Hardware and Stove Dealers' Association.

Sec. 2. The object of this association shall be to secure the friendly co-operation of the retail Hardware and Stove dealers of Louisville and vicinity, toward promoting their social and commercial interests.

ARTICLE II.

QUALIFICATIONS OF MEMBERSHIP.

Any person, firm, or corporation residing in the city of Louisville, or immediate vicinity, and which is engaged in the retail Hardware business, carrying a general stock or Hardware, and is in good standing, may become a member by subscribing to the Constitution and paying the annual dues prescribed by the By-laws.

ARTICLE III.

OFFICERS.

The officers shall consist of a President, two Vice-Presidents, Secretary and Treasurer, which officers, with five other members shall constitute the Executive Committee.

ARTICLE IV.

ELECTION AND DUTIES OF OFFICERS.

Section 1. The officers and five members of the Executive Committee shall be elected annually by ballot, each firm to have one vote.

Sec. 2. The President shall fill any vacancy which may occur before the next annual meeting, and members so appointed shall act until the next annual election.

Sec. 3. It shall be the duty of the President, or in his absence the Vice-Presidents, to exercise supervisory control over the affairs of the association, and to carry out and enforce all measures adopted by the association calculated to improve the condition of the retail Hardware business.

ARTICLE V.

QUORUM.

Section 1. Five members shall constitute a quorum of the Executive Committee.

Sec. 2. At any meeting of the Association ten members shall constitute a quorum.

ARTICLE VI.

PROHIBITED SUBJECTS.

Partisan politics and private personal enterprises are strictly prohibited in the deliberations of the Association.

ARTICLE VII.

GRIEVANCE COMMITTEE.

Section 1. A Grievance Commitee of three (3) members shall be elected at the annual meeting of the Association.

It shall be the duty of the Committee to receive any complaints of a member, provided the same shall be in writing and signed by the party complaining.

Sec. 2. In case of failure of adjustment by Grievance Committee of any complaints brought before them, the matter shall be brought before a regular meeting by the secretary, and shall be acted upon by the Association.

By-Laws.

ARTICLE I.

Section 1. Persons, firms or corporations eligible under the constitution may become members after placing or having placed by other members their application with the secretary, accompanied by a membership fee of three dollars, and after being duly elected as such at a regular meeting of the association, by a majority of the members present.

Sec. 2. No member in arrears to the Association shall be entitled to a vote.

ARTICLE II.

Section 1. The regular meetings shall be held on the second Friday of each month, at eight o'clock P. M.

Sec. 2. The annual meetings and election of officers shall be held on the second Friday of February.

ARTICLE III.

Section 1. In the absence of the President and Vice-Presidents at a regular, annual or called meeting, a President *pro tem.* may be elected by a majority vote of the members present.

ARTICLE IV.

Section 1. The Secretary shall enter in suitable books the minutes of all votes and proceedings of the Association and Executive Committee. He shall also keep a list of members and issue all notices that may be required by the By-Laws or other proper authority and at regular meetings shall report the proceedings of last preceding meeting. He shall also take charge of the properties of the Association, and shall receive all money due it, and turn same over to the Treasurer and require his receipt.

Sec. 2. The Treasurer shall take charge of all moneys belonging to the Association, and shall, in suitable books, keep correct accounts of cash received and expended on behalf of same.

Sec. 3. No disbursements shall be made by the Treasurer without the written approval of the President, and then only for the regular expenses of the Association, and if so voted by a majority of the Executive Committee.

Sec. 4. The books of the Secretary and Treasurer shall be open to inspection by the proper authorities at any time.

Sec. 5. The Executive Committee shall have control of all properties of the Association and shall manage its affairs in strict compliance with the Constitution and By-Laws. They shall call special meetings when necessary for the good of the Association.

ARTICLE V.

No officer shall contract or incur any debt in behalf of this Association except by two-thirds vote of the members present and voting at a regular meeting.

ARTICLE VI.

AMENDMENTS,

The Constitution and By-Laws may be amended by a two-thirds vote of the members present and voting at a regular meeting, and a notice in writing having been given at least one month previous to such meeting.

As APPEARS by the advertisement under the head of "Help Wanted," Atha Tool Company, Newark, N. J., are looking for a salesman to call upon the jobbing Hardware trade of the West.

William M. Fairbien.

WILLIAM M. FAIRBIEN of the Charles Parker Company, Meriden, Conn., died at his home in Brooklyn, Sunday, October 29. For nearly a year he had been suffering from nervous prostration and brain trouble, the immediate cause of his death being paralysis. The company, realizing for some time past that he was in need of recuperation, endeavored to have him take a long vacation and make a trip to Europe, but without success.

W. M. Fairbien was born in Dunbar, Scotland, in June, 1846, and came to this country when 17 years old. His first employment in the Hardware trade was with the Russell & Erwin Mfg. Company, going from that house to the firm of Sheldon, Hoyt & Co., and afterward to Rich & Brewster, both of the latter concerns being New York Hardware jobbers. Then he went West and for a long time was with the Perin & Gaff Mfg.

Company, Cincinnati, Ohio, Hardware manufacturers, for whom he traveled South soon after the close of the Civil War. In 1878 he connected himself with what is now the Charles Parker Company, continuing with them until his death.

Mr. Fairbien was very popular with the trade on whom he called, and was held in high esteem by his fellow "Knights of the Grip." In announcing the death of their late employee, the Charles Parker Company refer to him as "our principal representative in the large Western cities, and recall his genial disposition and happy personality, which endeared him to all with whom he came in contact. Knowing him to have always been zealous in our interests we desire in this manner to express to his friends among our customers, a deep regret at the great loss we have all sustained."

In his early life as a salesman his spare time was devoted to reading law, rather than fiction. Although he did not practice it as a profession, he was, we are informed, admitted to the bar in Indiana, and often gave the benefit of his knowledge freely to friends and employers. He had a fine memory, was a great reader and had the reputation of being possessed of a fund of general information which enabled him to converse interestingly on a great variety of subjects. He also had some fame as a good story teller.

Mr. Fairbien was one of the originators, if not the originator, of the proposal to exchange photographs among the older traveling salesmen, which was successfully accomplished in the fall of 1892. This came about through the sudden death of William Burt, who was the Western salesman of the Norwich Lock Mfg. Company, Roanoke, Va. Mr. Burt was a passenger on a train which left Keokuk, Iowa, August 7, 1892, and shortly after leaving the depot the train was struck by flying rock from an unusually severe blast which had been fired by workmen who were quarrying rock on a bluff at the road side. His wounds were of such a character that he died the same night at St. Joseph's Hospital, in Keokuk.

Shortly after Mr. Fairbien and two or three salesmen companions were discussing the matter at the Southern Hotel, in St. Louis, when the suggestion was made that as one after another of the "Old Guard" were dropping off, it would be an excellent idea to exchange photographs among the veterans of the road, so that in the future they would have some memento of dear friends who might die. This suggestion was acted on the same day, the party going to a St. Louis photographer and sitting for pictures. As a result of this proposition something like 200 to 300 photographs were exchanged.

Mr. Fairbien is survived by a widow in Brooklyn, and his father, mother, four brothers and a sister in Scotland.

C. M. Avery & Co.

ON the 1st ult. C. M. Avery, the well-known manufacturers' representative of Chicago, associated with himself as partner Herbert L. Hill, late of the Belding-Hall Mfg. Company, of that city. As the representative of the latter concern during the past six years Mr. Hill has had the Southern States as his territory, and is referred to as having won the confidence and esteem of the merchants in that section, which has fitted him for the more important opportunity offered him by Mr. Avery. During the 25 years in which Mr. Avery has been a well-known figure among the Hardware manufacturers' representatives he has made the acquaintance of the jobbing trade of the entire country, but for the most part his work has centered in the East and Middle West, it being ten years since he has canvassed the Southern trade.

The new firm announce that hereafter their contracts with manufacturers will include the jobbing trade of the United States. The only locality in which they will canvass the retail trade will be the city of Chicago, through their city salesman. The plan they pursue there is said to be one which encourages the jobbing trade to buy goods the sale of which Avery & Co. are either introducing or pushing among the city retailers. The new firm, as successors to C. M. Avery, continue to be Chicago agents for the well-known Saw manufacturers, E. C. Atkins & Co. of Indianapolis, Ind. They also have charge of the Atkins Tubular Wood Saw department of E. C. Atkins & Co. as sales agents for the United States, and confidential representatives of O. D. Woodruff's Connecticut Meat Chopper, E. T. Mason & Co.'s Ideal Ice Cream Freezer, A. S. Anderson's Ole Olesen Rake, Clyde Cutlery Company, Hoeffler Mfg. Company and the Horton Mfg. Company. The firm's office and sample room occupy the ground floor at 161 Lake street, Chicago, where they will be pleased to welcome any of their friends who may be visiting the city.

Hardware Club of New York.

THE following names were added to the rolls of the Hardware Club at a recent meeting of the Board of Governors:

JOHN SIMMONS,
110 Centre street, New York.

ALBERT C. WHITE,
Providence, R. I.

CHARLES M. WOODS,
Havemeyer Building, New York.

American Hardware Abroad.

We give below advices in regard to export trade, and especially the opportunities which are presented to American Hardware manufacturers of introducing their goods in foreign markets. The question as to the extent to which the high prices now prevailing in certain lines tend to check the foreign sale is touched upon.

BRITISH LETTER.

FROM A SPECIAL CORRESPONDENT.

It is no part of my duty to criticise the British Government's Transvaal policy, for which relief much thanks. As a business man, however, I am compelled to examine carefully into the situation. One fact stands out in clear cut relief amid all the present clangor and confusion: The Government of the South African Republic is doomed to extinction. If commercial interests have necessitated this ghastly war, we may at least ask

Who Will Gain by the War?

When the Transvaal and the Orange Free State are British dependencies, HOW WILL IT AFFECT THE HARDWARE TRADE?

HARDWARE INTERESTS.—Assuredly the British Hardware exporter will suffer heavily. It was hard enough for him before the war to hold his own (for reasons which later I will state), but now that racial hatred is daily being engendered it is clear that Dutch buyers throughout the whole of South Africa will buy anywhere and anything so long as they can avoid British goods. It is only those who have traveled in South Africa who can adequately appreciate the intense loathing which the Boer and even the Afrikander exhibit toward the British. I merely state the admitted fact; the cause of it is no affair of mine. These, then, are the human dynamics of the situation. How do they affect the British, American and German exporter?

GERMAN TRADE WITH SOUTH AFRICA.—A comparative return lies before me, showing the German exports to Cape Colony, Natal and the Transvaal. So far as metals and metal manufactures are concerned Germany, on the whole, increased her trade in 1898, as compared with 1897. For example, she increased her trade by small increments in Copper and Brass Goods, in Gold and Silver Ware, in Bar and Sheet Iron, Raw and Cast Iron, Nails, Rails and Fittings, Rough Iron Ware, Steel, Tin Goods, Steel Wire. The German trade slightly fell back in Fine Iron Ware, various metal goods, Iron Piping, Brass Wire and Copper Wire. But 1898 was not a prosperous year, so far as South Africa was concerned, and it is sufficiently significant that she holds her own. In 1897 she exported 38,898 tons, valued at £1,254,658 ($6,273,290); in 1898, the tonnage went up to 40,244, valued at £1,149,022 ($5,745,110.)

There is reason, however, for believing that many German Hardware exporters WILL BE VERY HARD HIT, as their customers are just those who will be ruined by the present hostilities, and German credit has been more easily obtained than from England or America. While therefore Germany profits, in some degree, by the intensified racial hatreds, she loses because her customers, being already anti-British, are certain to suffer. Germany must look out for bad debts.

AMERICA'S OPPORTUNITY.—How stands it then with America? Here there are wheels within wheels. Perhaps it would be more accurate to put it a ring within a ring. For not only must America profit hugely by the anti-British feeling among Dutch, Hollander and Afrikander, but she gains because of her advantage in the matter of steam freightage.

ADVANTAGE IN FREIGHTS.—Over on your side you have had your "shipping ring" difficulties; you may take my word for it, you have only felt the thumb of the shipowner, while we have felt that enterprising gentleman's thigh. I have been officially informed by the parties concerned that there is now an agreement between the ship owners interested in the German-British-South Africa and those interested in the American-South Africa transit trade. The American is obviously the gainer. A short time ago I went into this question pretty closely and possessed myself of certain interesting documents. I append just two, as being distinctly pertinent. Here is a bill of lading dated May 16, 1899. It relates to a shipment to the order of a British firm, who were compelled to buy in New York because of the freight advantage. I include also the British freightage, which at once shows the American advantage:

"Mashona" at New York.

B/L. May 16, 1899.

Shipment of 58 cases of furniture.

Cost of goods and packing	£102 15 4
American freight—	
1061 ft. 9 in.. at 32s. 6d. per ton and 10 per cent.	£47 9 1
British freight—	
1061 ft. 9 in., at 40s. per ton and 10 per cent.	£58 7 11

The British merchant thus gained 10 per cent. by filling his indent in America. Since then, however, American rates have more closely approximated to British; but America still has the bulge, as will be seen from these freight quotations on various Hardware goods:

	American rates.	English rates.— Bucknall.	Intermediate.	Mail.
Brassware	....	....	....	....
Cabinet Ware	40/	42/6	45/	47/6
Brass Tubes	....	....	....	....
Brushware	30/	31/3	32/6	33/9
Bolts and Nuts	30/	31/3	32/6	33/9
Pickaxes	30/	31/3	32/6	33/9
Plows	27/6	31/3	32/6	33/9
Agricultural Implements	30/	31/3	22/6	33/9
Tools	30/	31/3	32/6	33/9

I suppose American exporters can hardly object to this novel method of fixing sea freights—the longer the journey the cheaper the rate.

GROWTH OF AMERICAN TRADE.—Of course, British South African merchants are seriously perturbed. The South African Merchants' Committee has recently received a private return, indicating the growth of American trade with South Africa. It is distinctly an interesting document, and I will reproduce some of the Hardware items, showing their comparative growth during five years:

Return of Merchandise Imported into Cape Colony from the United States of America.

	1893. £.	1897. £.
Lamps	.....	4,601
Machine Oil	1,475	8,180
Paints and Colors	106	3,316
Carriages and Carts	6,852	37,968
Barrows	1,969	34,970
Clocks and Watches	2,053	17,844
Furniture and Cabinet Ware	14,859	40,481
Fencing Wire	7,839	31,598
Hardware	26,523	62,018
Implements and Tools	39,040	56,844
Pipes and Piping	299	21,915
Leather (Unmanufactured)	4,965	10,307

These figures speak for themselves. There can be no shadow of doubt that there is a splendid field for American activity in South Africa.

TRADE THROUGH LONDON.—Perhaps I may give one hint. The British merchant is a free trader, and will readily buy American goods for shipment *ex* New York, if prices suit him. It will pay well to conciliate the British exporter in London; it will probably prove easier to sell to him than cut him out in South Africa. Broadly speaking, I should say: Let Americans cultivate direct trade with the Dutch element in South Africa but keep in touch with the British element in London. Above all, never quote prices in South Africa that would exclude your own goods if sold through a British merchant.

THE BRITISH BOARD OF TRADE RETURNS for September are well calculated to warm the cockles of the British Hardware manufacturer's heart. On the comparative

monthly return "Metals and articles manufactured thereform (except machinery and ships)" actually advanced by over $5,000,000. This is phenomenal. Not much of it went to the United States, however. The unsettlement in the American Tin Plate trade told its tale in the increased exportation of Welsh Tin Plate to America. In September, 1898, South Wales exported $163,575 worth of Tin Plate; in September this year, the figures rose to $415,675.

LETTER FROM CONSTANTINOPLE.

We give below extracts from an interesting letter from Constantinople relating to the introduction of American goods in Turkey. The writer, who is an American business man familiar with export matters, refers to the important trade relations existing between the United States and Turkey as due in good measure to our Consul-General at Constantinople, Charles M. Dickinson, who in less than two years' service has accomplised much in this direction. Mr. Dickinson is referred to by our correspondent as a clear headed business man and gentleman, who is gradually getting the various Consuls and agencies under him into the same excellent working order that obtains in his own office.

We are advised he has been instrumental in introducing American flour into that market, the importation last year aggregating about 90,000 bags, valued at upward of $250,000. Mr. Dickinson is also credited with having worked hard for months to have established direct steam communication between New York and Constantinople, the result being a direct line sailing about once a month, with the reduction of through rates on all classes of merchandise. The English lines do not like it, but in the opinion of our correspondent it makes possible the introduction and sale of many lines of our goods in competition with English and German manufacturers. Referring more in detail to the introduction of American goods our correspondent says:

The last ship of the "direct" line brought over something like 25 tons of Wire Nails from America, and more are coming by the next steamer. There seems to be an excellent field here in this line. A great deal of building is going on here, almost all wooden buildings, and these are the Nails used—called here *Points de Paris*. There is no question of our ability to compete in this line satisfactorily.

Bolts and Nuts will find a good sale here. American Locks, Padlocks, Butts and Hinges, Sad Irons, Hammers, Bread Knives, Lemon Squeezers, Ice Breakers, &c., are already introduced and their sale might easily be increased. Meat Choppers and Raisin Seeders are also bought from us. The leading shop here tells me that they tried German articles in these lines for a time, because they were cheaper and because they were enameled instead of tinned, but their customers had so much trouble with them that they have gone back to the American goods.

Our Gas and Oil Stoves ought to be sold here, and I believe that one or two firms are getting out samples, Birmingham goods now being sold. American Iron Heating and Cooking Stoves are just beginning to find their way back here. Were formerly sold, but freights operated against them and the Belgian and French articles cut them out—tiny, cheap affairs of sheet iron, some of them landed here as cheap as $3, perhaps less. If an American concern would make similar patterns could undoubtedly do an enormous business. But our own goods in the simple, cheap styles will go.

Any manufacturer of Iron and Brass Bedsteads who can compete with the Birmingham goods in price will do a big business here; easily, I should say, $15,000 to $20,000 a year. There is a great consumption of these goods. Practically no other Bedsteads used. As for our general lines of Hardware and novelties that might be sold here, there is no end of them.

Some credit is needed here, for the country is not rich and credit is freely offered by English and German exporters, but American manufacturers are quite right in their suspicions of the trade in general. It is only in the rare cases of unquestioned character and responsibility that any credit ought to be granted. Then, however, our people will undoubtedly find it to their advantage to back up their agents here in every possible manner.

People here have a very exalted idea now of the Americans and of what we do and can do, partly on account of the result of the Spanish-American War and partly because of Mr. Dickinson's efforts.

IMPROVED SHIPPING FACILITIES.

New Australian Freight Route.

The White Star line have just put on a fleet of five new steamers to operate between Liverpool, England, and Australian ports. The importance and significance of this enterprise to American manufacturers is that through the medium of their Atlantic fleet as a feeder, cargo will be taken from the United States to Australia on through bill of lading at interesting rates.

NEW STEAMERS.—The White Star Company have had chartered steamers of comparatively small tonnage on this route for five or six years, in the main to serve the manufacturing centers of Northern and Western England, and, finding it profitable, have just built the "Medic," "Afric," Persic," "Runic" and "Suevic," all new twin screw steamers of 11,984 tons each, being 2000 tons larger than the "Majestic" and "Teutonic" of their Atlantic fleet.

FREIGHT RATE.—They are now quoting a flat rate of 20 shillings sterling a ton on everything (equivalent to 12 cents a cubic foot or 24 cents per 100 pounds), for cargo to Albany (in the southwestern corner of Western Australia), Adelaide, Melbourne and Sydney. A through bill of lading will also be given to minor Australian ports, reached by coasting vessels from the main ports named.

MONTHLY SAILINGS.—The "Medic" and "Afric" have been dispatched on their first trip, the "Persic" is scheduled to leave Liverpool December 7 next, and the remaining boats are expected to be finished in time to have the entire fleet in the service beginning in April, 1900. There will be monthly sailings from Liverpool early in each month, as near the 7th as possible, and freight from New York will make close connections through the medium of their fast Atlantic fleet. The time of the "Medic" on her first voyage to Albany, the first outport, was 35 days.

FREIGHT COMPETITION.—This makes three powerful competing interests for steam freight from New York to Australia, and the experience of years proves that wherever American goods are introduced through the medium of cut freight rates, low prices, or other causes, the superiority of American made goods in quality, style, finish, and the way they are put up will enable them to hold their own in foreign markets at anything near equality in price.

New Steamer Route Between New York, Hawaiian Islands and San Francisco.

Flint & Co., 30 Broad street, New York, who are closely identified with Flint, Eddy & Co., have sold their entire fleet of sailing vessels plying between New York and San Francisco, to a syndicate in San Francisco headed by William B. Mighell. The fleet consists of the following vessels, viz.: "May Flint," "Henry B. Hyde," "S. D. Carleton," "R. D. Rice," "St. Francis," "A. J. Fuller," "St. James," "Pactolus," "St. David" and "John McDonald."

NEW STEAM FLEET.—The firm are now having built for them four steamers of about 8500 tons each to replace the sail fleet alluded to above. One of the steamers, building at the Union Iron Works, San Francisco, and one of the three building at Roach's shipyards, Philadelphia, will be ready for service, it is expected, in April and May next, the other two following at intervals of two months.

NEW YORK, HONOLULU AND SAN FRANCISCO.—The steamers will ply between New York and San Francisco, calling at the Hawaiian Islands, and will be cargo boats only. They will be dispatched at intervals of 40 days, and it is hoped at shorter intervals soon.

SIXTY-DAY VOYAGES.—They are expected to make the voyage via the Straits of Magellan in 60 days, stopping but once for coal, their maximum speed being given as 10½ knots. They are referred to by the owners as thoroughly up to date, high class freight boats, that will fly the American flag.

A REGULAR SERVICE.—The regularity of the service will be a great advantage to merchants, who can thus more closely calculate on the arrival of goods. Their aggregate capacity is nearly double the fleet just sold, the delivery of which will be extended over a period of about six months.

AUSTRALIAN LETTER.

FROM A SPECIAL CORRESPONDENT.

MELBOURNE, September 26, 1899.

BUSINESS CONDITIONS.—Things continue to move on the upward grade in this part of the world, and, both as regards volume of business done, prices and settlements, merchants are feeling pleased. Good sales are reported during current month in the heavier lines of Hardware.

GOVERNMENT IMPROVEMENTS.—The Governments of the different colonies are inclining more toward progressive policies and the expenditure of moneys on roads, bridges and railways.

COLONIAL FEDERATION.—Federation is an all but accomplished fact, and though it will not increase the purchasing power per head of the existing population, still, one of its first effects will be a steady influx of emigrants from the more crowded countries of the Old World. In anticipation of increased settlement we must have increased facilities for transit, and there is not the slightest doubt that this country will soon experience a mild boom in its demand for and consumption of the heavier lines of goods.

BRITISH COMPETITION.—British merchants are well represented out here, but America will have to hustle a bit more if she is to maintain her present popularity. In the lighter lines of Hardware, Shelf Goods, &c., the States are very popular, partly on account of the lightness and neatness of their Tools, partly on account of their immensely superior packing. But much remains to be done even yet, and the old country is certainly of late giving increased attention to the value of these markets.

DECREASED WOOL CLIP.—Our wool clip will, it is feared, be rather light this year, but as the prices ruling are so much better than of late years the loss is not so apparent.

LAND CULTIVATION.—Perhaps one of the best features of the future outlook is the increased attention being given to the proper cultivation of our lands. The producing interest is, in fact, being slowly built up almost to the level of a fine art, and an early step to be taken will be in the matter of irrigation, a subject which is latterly receiving the attention it needs in a country like Australia, where three consecutive dry seasons are not by any means an unusual occurrence.

RAINFALL IN VICTORIA.—Indeed, Victoria, perhaps the most favored colony of the lot in the matter of climate, only has an annual average rainfall of 24 inches, the other colonies either possessing far more or far less than the above.

BUILDING ACTIVITY.—The building trade is proceeding in a manner reminiscent of the earlier days of the land boom, both in Melbourne and Sydney, and it is satisfactory to know that the building is not of the purely speculative order of things, but is actually necessary to meet the increasing requirements of the increasing population.

COLONIAL STEAMSHIP LINE.—Much interest has been excited by the inauguration of a new line of mammoth steamers to run at monthly intervals between Liverpool, London and these colonies. The new boats, the Liverpool White Star Line, are each of 12,000 tons, and their advent should cause lower freights outward. With the probability of a light wool clip it is hard to see how homeward freights will be secured this year, taking into consideration the numberless "tramps" of all sizes which make for Australia during the wool season.

FEDERAL EXHIBITION.—Sydney is contemplating a federal exhibition as soon as the stir of the Paris one shall have died away, and to celebrate the consummation of "the United States of Australia."

THE AXE COMPETITION.—The American *vs.* English (for that is what it really is) Axe and Saw competition, to be held at Ulverstone (Tasmania) November 29, is exciting only a moderate amount of attention. A number of English and American firms have been beguiled into entering, but it is hard to see much satisfaction in contests of this nature. Rather are they the cause of dissatisfaction, since so much will depend on the individuals who wield the tools.

BRIDGE BUILDING IN VICTORIA.—The largest steel railway bridge yet built in Victoria has just been completed at Melbourne. It is for Tasmania, and has a clear span of 160 feet, width 13 feet, hight 14 feet 6 inches. Its chief feature is the exclusive use of rolled joists, all the cross girders, top and bottom booms, and part of diagonals being of that section. The bridge was built by Dorman, Long & Co. at South Melbourne.

AUSTRALIAN FEDERATION.

The federation of the provinces into which Australia is divided—viz.: New South Wales, Victoria, Queensland, South Australia, Western Australia and Tasmania—is now practically assured, all but one or two of the provinces having taken action to make it effective. The one or two least important provinces which have not yet passed the necessary laws are expected to do so in two or three months, when their legislative bodies meet. The effect of this will be to give them one general government, with a common tariff for all, instead of six sets of governments, each with a tariff, which for trade purposes made them practically foreign to each other. The result will be freer trade relations between the various provinces and naturally an enlargement of trade in consequence of the removal of barriers which operated to restrict trade. As this is a growing and desirable market anything that promotes trade is of interest to manufacturers here, especially as the people there developing a new country consume relatively much more than the same population in an old country.

THE EXPORT TRADE AND CHANGES IN PRICE.

From a gentleman familiar with export business we have the following communication relating to the effect on our foreign trade of the high prices which rule in certain lines. He calls attention to the danger of losing ground in foreign fields which has been occupied by our products. The matter is certainly deserving the careful consideration of manufacturers, especially as the impression prevails abroad that the foreign markets are cultivated by us as an outlet for goods which are not taken up by our home trade and are neglected as soon as the domestic demand sets in. The course of manufacturers in former days gave some show of reason to this impression, and there are indications that the same mistake may be committed again. Efforts are made in some quarters to guard against the mischief by keeping the export prices as nearly unchanged as possible, and, if necessary, making lower prices to foreign buyers than are given to domestic, with a view to holding trade already secured. On this general subject our correspondent says:

During the past 12 months the American public have become accustomed to the idea of expansion, and the thought has occurred to me whether our manufacturers realize what it means to them, especially in view of the way in which they are handling their export business.

Ask any one of them if they desire to cultivate foreign trade, and they will answer in the affirmative.

LARGE FOREIGN TRADE.—During the past decade the exportation of Hardware has grown immensely, many manufacturers having expended a large amount of time

and money to get the business, until in some lines their export shipments during the dull periods equaled their domestic shipments. This must have been a boon to them. How is it now? Many of them seem to forget the efforts they have made in the past, and how long it took them to get their goods into foreign markets.

EFFECT OF HIGH PRICES.—Foreign buyers do not take our goods solely upon their merits; price governs very largely, and herein lies the greatest mistake that some of our manufacturers are now making on their export business.

England and Germany have advanced their prices, but they have not made any such radical changes as we have. Compare our prices of to-day and a year ago on Cast Iron Hardware, Brass Hardware, House Furnishing Goods, Shovels and Spades, Carriage, and other Bolts, Vises and many other articles too numerous to mention. They are prohibitive except where the conditions are especially favorable to us, such as on Wire and Wire Nails, but a great many orders for miscellaneous Hardware are being diverted to the above countries.

NEGLECTING FOREIGN TRADE.—Ask our manufacturers and they will tell you that they are overcrowded with domestic business. A situation not to be despised, but how about the future, when with a curtailed home business and an increased production they will surely need all the orders they can get?

THE WISEST POLICY.—Some of our more conservative managers realize the necessity of making as few changes as possible—if any—in their export prices, and I am of opinion that they are pursuing the wisest policy.

Pacific Coast Freights.

THE controversy in regard to the Pacific Coast freight rates and the contention of the jobbers of the Middle West that the differential between carload and less than carload shipments is unreasonable and excessive continues to be carried on with energy and may become still more prominent. The representatives of the Pacific Coast jobbers are reported to be urging, as a member of the Interstate Commerce Commission, a well-known San Francisco gentleman connected with jobbing interests.

The following circular, with a copy of the complaint of the Business Men's League of St. Louis to the Interstate Commerce Commission, has been sent out by the St. Louis Traffic Bureau, who are moving actively in the interests of the jobbers of the Middle West:

We have been informed that Pacific Coast jobbers and others have been trying to enlist Eastern commercial organizations and manufacturers in the defense before the Interstate Commerce Commission of the present iniquitous transcontinental tariff.

In order that you may clearly understand grounds of complaint of the merchants of the Middle West, we inclose copy of the complaint of the Business Men's League of St. Louis *vs.* the Atchison, Topeka & Santa Fé, *et als*, calling special attention to the following points:

1. That our principal grounds of complaint are the unjust and unreasonable differences between carloads and less than carloads on goods that naturally move in both manners. We recognize the fact that there are many articles whose natural movement is in carloads and upon which we make no contention. We also know that the carload rates cannot be advanced, hence our contention, if granted, must be by a reduction in the less than carload rates; therefore no carload shipper can be injured.

2. The varied commodity rates less than carloads on analogous articles classified the same in various classifications and packed together under ordinary circumstances are so adjusted as to unduly harass the small buyer, without benefit to any one, except the jobber on the Pacific Coast, who can buy round lots of each article. To correct this must be done by a reduction in the higher commodities, therefore every Eastern shipper and most Western buyers will profit by our gaining this contention. Examples of present rates will be found on pages 5, 6, 7 and 8 of inclosed complaint.

3. Rates to intermediate points east of the Pacific Coast are too high, as compared with Pacific Coast rates. They can only be corrected by reduction in intermediate rates.

4 (Which is Article V of complaint). We understand to be the one under which Pacific Coast jobbers hope to enlist Eastern cities in their behalf—viz., that rates from St. Louis, Chicago, &c., should be lower than from cities east of us, further away. It is to be readily seen that rates from the Eastern seaboard cannot be advanced above water rates, and rates cannot be changed in sufficient degree to shut out any city east of us from its Pacific Coast trade. We are contending for a recognized principle that exists throughout the United States, except on Pacific Coast traffic. Can any jobber or manufacturer afford to see another principle established by the railroads or the Interstate Commerce Commission than that distance is a leading factor in making reasonable freight rates?

We believe the trade of the jobbers injured by the present conditions to be of more value to the Eastern manufacturers than that of the few jobbers on the Pacific Coast; therefore that the manufacturers should keep hands off.

We believe the interest of every city east of the Missouri River is with us in the general principles involved in this controversy, and they should therefore be with us in our contention.

Trade Items.

THE NEW CASTLE SHOVEL COMPANY, New Castle, Pa., manufacturers of Shovels, Spades and Scoops, are officially represented in Chicago by K. F. Peterson and F. A. Hastings, whose office is located at 205 Lake street, in the Hardware district of the city. The same gentlemen also represent the Pennsylvania Bath Tub Company, manufacturers of Cast Iron Bath Tubs, Ellwood City, Pa.

THE J. D. WARREN MFG. COMPANY, Masonic Temple, Chicago, have issued a profusely illustrated supplementary catalogue of the Warren Patent Screw Cabinet and Bolt and Hardware Cabinets. This catalogue gives full details of Screw and Carpenters' Tool Cases, Bolt Cabinets and Drawer Cabinets with interchangeable oak drawers. The catalogue is particularly impressive as showing the extent to which Mr. Warren has carried his system of designing shelving to accommodate special classes of goods, as well as the ingenuity which he has displayed and the practical knowledge shown of the requirements needed. The information is conveyed in such a way that every Hardware merchant will be able to see just how his wants can be met, and what size of cabinet he may need for his trade. The catalogue comprises 18 large pages, and is handsomely printed.

CHAS. W. EMERY, who is well known to the jobbing Hardware trade, will terminate his connection with the Van Camp Hardware & Iron Company, Indianapolis, Ind., on December 1, and will then be open for an engagement elsewhere. Mr. Emery's position with the Van Camp Company is that of manager of their salesmen's department, for which office he is regarded as possessing special qualifications in view of his 21 years' experience in the trade, both wholesale and retail, and his peculiar and valuable methods of superintending the work of salesmen. Mr. Emery may be addressed care of the Van Camp Hardware & Iron Company.

WE ARE INFORMED that the Heath-Quimby Company of Minneapolis, Minn., makers of the Heath and Blizzard line of Bicycle Pumps, Diamond Cycle Stands, &c., will continue their Chicago office the coming season at 56 Fifth avenue. The office will be under the management of Elmer E. Bast, a gentleman whose long acquaintance with the Bicycle and Hardware trade renders him well fitted to assume charge of the interests of the Heath-Quimby Company. The company state that a small stock will be carried in Chicago, and all possible efforts will be made in other directions to accommodate their large and growing trade.

AT a recent meeting of the Stanley Rule & Level Company, New Britain, Conn., the following officers were elected: F. N. Stanley, president, succeeding the late Charles L. Mead; C. B. Stanley, secretary, and H. S. Walter, treasurer and general manager.

Price-Lists, Circulars, &c.

NATIONAL SUPPLY COMPANY, 5-7 West Lombard street, Baltimore: Illustrated catalogue of Furniture Casters, Drawer and Shutter Knobs, &c. This company also make a large line of Bolts and Rivets.

THE GOODWIN & KINTZ COMPANY, Winsted, Conn.: Catalogue of Fine Metal Goods, including Clocks, Candelabra, Bronzes, Clock Ornaments, Umbrella Stands, Five O'clock Teas, Inkstands, Vases, &c. They state that they are prepared to make Cast and Sheet Metal Goods of every character in brass, soft metal, spelter, steel, aluminum and copper.

B. F. AVERY & SONS, Louisville, Ky.: Illustrated catalogue and price-list 1899-1900 of Plows, Planters, Cultivators and Harrows.

Henry Disston & Sons.

AT the works of Henry Disston & Sons, business is unusually active, all departments being run to their fullest capacity. The foreign demand is very active, and H. C. Disston, who has been on business tours for the firm pretty much in all parts of the civilized world, anticipates a constant growth in the demand for American goods. Sweden, Norway and Denmark are now teaching English in their public schools, as the growing intercourse with Britain and the United States renders a knowledge of the language almost indispensable. Mr. Disston regards this as a significant feature, and will do much to facilitate business in that part of the world. A great many Hardware merchants have visited the Disston Works since the National Exposition opened. They had 350 delegates visit them on one occasion, the steamer "Peerless" having been engaged to carry them from the city direct to the works at Tacony. Others have made individual visits, including Paul Berghaus of Gottenberg, Sweden; J. H. Rogers of Townsland, Queensland; Mr. Drake of Mason, Struthers & Co. of Christchurch, New Zealand; John Milne of Swelley & Co. of Brisbane.

The Queen Percolator.

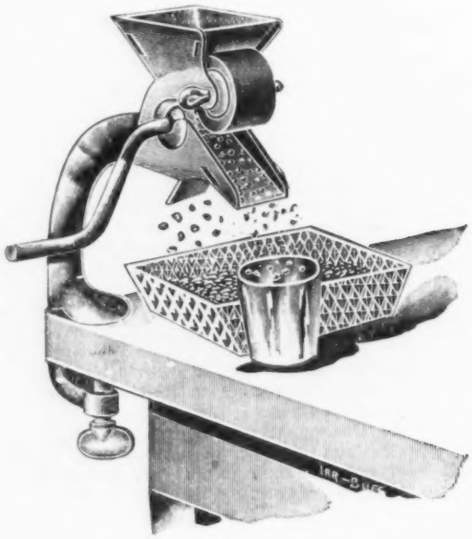
An illustration is given herewith of the Queen percolator, manufactured by the Bellaire Stamping Company,

The Queen Percolator.

Harvey, Ill. In the illustration a portion of the side is broken away to show the construction of the interior. A seamless and retinned drip cup is inserted at the top of the pot to receive the coffee, which must be finely ground. Over the coffee is placed a perforated disk, after which cold water is poured into the pot through the coffee. After the water is brought nearly to the boiling point it is drawn off and again poured into the pot through the coffee, when it is ready to serve. By this process the cold water is used to moisten the ground coffee, the heat and steam then cause the grounds to swell and the hot water finally poured through the grounds liberates the aromatic oil but does not extract the bitter alkaloid produced by the boiling process. The percolator is manufactured in 2 and 3 quart sizes. The pot is a handsomely finished specimen of the high grade enameled ware turned out by the company.

Perfection Raisin Seeder.

The Union Mfg. Company, Buffalo, N. Y., are offering the raisin seeder herewith illustrated. It is constructed of steel, all working parts being tinned. It is referred to as strong and light, and as being designed for ease in operation and cleaning. The fruit ejecting device is a

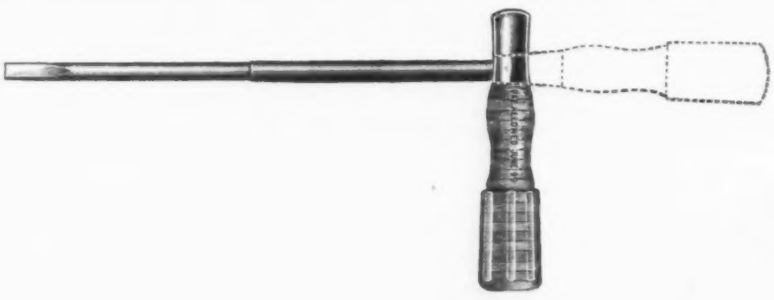


Perfection Raisin Seeder.

series of tempered steel springs, a feature which the company refer to as overcoming all danger of breakage. For cleaning the machine the roller eye pin is withdrawn, liberating the parts, which can be reassembled, it is claimed, in three seconds. No adjustment in use is required.

Union Brand Leather Handle Screw Driver.

The cut herewith illustrates a screw driver put on the market by the Union Mfg. Campany, Buffalo, N. Y. The handle can be used in the regular way or as a T-lever, as shown in the illustration. This feature is claimed by the manufacturers as indispensable for heavy work. It is also claimed that the driver is the only one made with a handle that can be used as a T-lever. The handles are made of only the best quality of sole leather with powerful automatic machinery, it is explained; also that the steel used in the bits is of the highest grade, made to order for the purpose, hand forged and well tempered. Every tool is guaranteed.

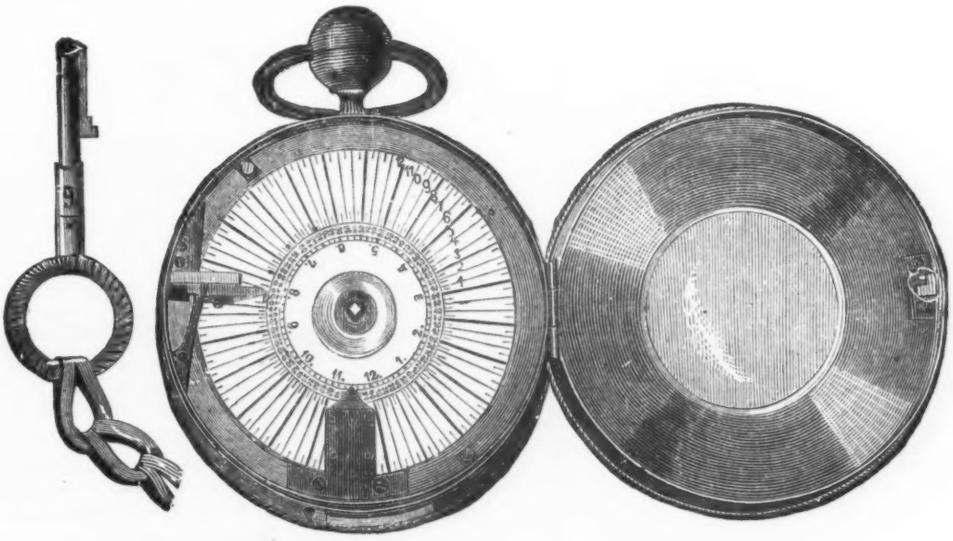


Union Brand Leather Handle Screw Driver.

Frank A. Bogart, Los Gatos, Cal., has been enlarging the line of goods handled by him, and his assortment now comprises Hardware, Tinware, Sporting and Athletic Goods, Stoves, Wind Mills, Pumps and Roofing, Gas Fitting and Plumbing Supplies. Mr. Bogart has rented the adjoining store and is using it as a plumbing sample room. The floor space is occupied by a line of Bathtubs, while the walls display Tank Closets, Wash Trays, Kitchen Sinks, Washstands, &c. His establishment now has a frontage of 60 feet on one of the principal streets of Los Gatos.

Hahn's Watchman's Time Detector.

C. Nanz & Co., 127 Duane street, New York, are the sole agents for the United States and Canada of Hahn's improved watchman's time detector, with safety lock attachment, here shown. This detector is made for 6, 12, or 18 different keys for a corresponding number of sta-

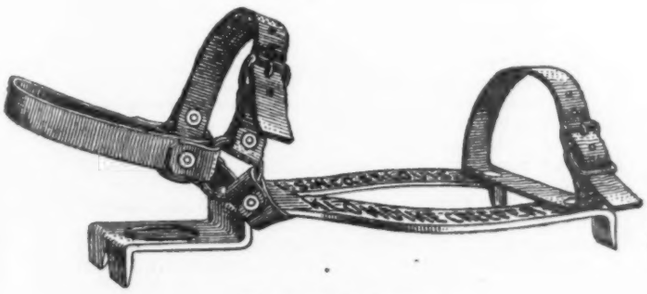


Hahn's Watchman's Time Detector for 12 Stations.

tions or floors. The clock, the case of which, together with the keys, is heavily nickeled brass, consists of full jeweled lever movement, which revolves around a dial, there being an independent spring to prevent its being turned back. Hours and minutes are recorded, and when operated with the keys it records the exact time upon a paper dial that the key is inserted by pushing a raised number in its proper place on the dial, thus showing the time of the watchman's presence at any particular station; there being a dial for each day. A great advantage is that the registering is done by raised numbers 1-16 inch long, and each in its proper place, instead of an arbitrary sign, so that if a station is missed it is at once apparent, both from the registered numbers and the intermediate blank space, so that the watchman must account for the omission. The movement is separate from the recording mechanism, and will run about 60 hours. The keys are fastened permanently at the various stations the watchman is required to visit, the detector being carried to each floor or station and the record made, thus showing the tour has been properly made. A new paper dial is put on each day, on which the date is written, after which the clock is wound, locked and given to the watchman.

The Klondike Creeper.

An illustration is herewith given of the Klondike creeper, which has just been placed on the market by the Ludlow-Saylor Wire Company, Fourth and Elm streets, St. Louis, Mo. It is intended principally for mountain-



The Klondike Creeper.

ous countries, in which snow and ice are found for a large portion of the year. It is designed for the use of miners, prospectors and hunters. It is made of cast steel, is quite light, and is well finished, either japanned, polished or nickel plated, and is provided with straps and buckles made of the best material.

Pelouze Postal Scales.

In Fig. 1 is shown a postal scale, placed on the market by Pelouze Scale & Mfg. Company, Chicago, Ill. It is 3 inches high and is referred to as being beautifully made. It is designed for use on a lady's desk or on a library table, and tells at a glance the exact cost of post-

age, in cents, required for letters, books, packages and newspapers to any point in the United States or Canada. An envelope opener and letter balance, shown in Fig. 2,

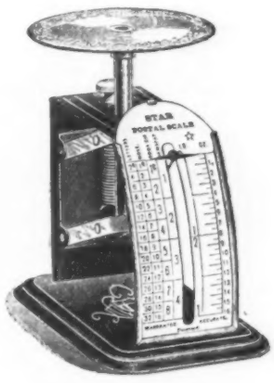


Fig. 1.—The Star Postal Scale.

is also made by the company. While it is a useful and practical envelope opener, it is explained that by placing a letter to be mailed on the handle, if the letter exceeds 1

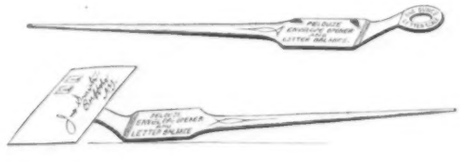


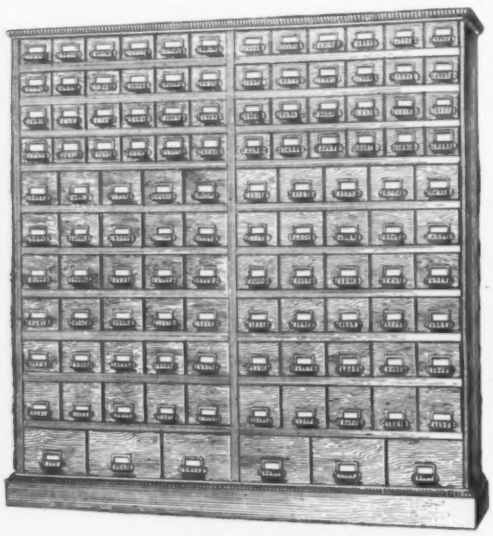
Fig. 2.—Envelope Opener and Letter Balance.

ounce in weight, or requires more than a single postage, it will raise the blade. This is designed to retail for 30 cents, and the scale for $1.25.

Oleson & Walhus, Mayville, N. D., have purchased the stock and building of Aslakson & Olsness, Cheyenne, and have removed their stock from Mayville and combined it with the goods thus acquired. They have also built an addition of 40 feet to the Cheyenne store, making its total length 102 feet, 20 feet wide. The firm carry a varied line, comprising Shelf and Heavy Hardware, Tinware, Stoves, Paints, Oils and Varnishes, Sporting Goods, Bicycles, &c.

Heller's Bolt Cabinet.

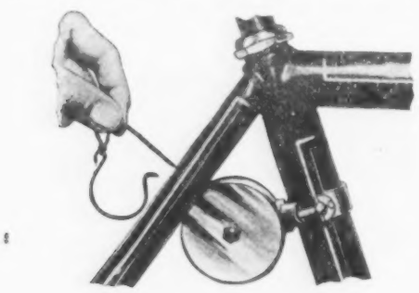
W. C. Heller & Co., Montclair, N. J., are manufacturing the cabinet bolt case here illustrated. It is 54 inches high, 54 inches wide, 15 inches deep, and has a total of 114 drawers. It is furnished in white wood, North Carolina pine, oak, ash or cherry and weighs packed for shipment 450 pounds, measuring for export shipment 40 cubic feet. The case is fitted with an assortment of Heller's steel boxes, all 14 inches long, each box having a strong pull and card clip, the latter for labels to indicate the contents of box. The case is designed to hold a full assortment of bolts from the smallest to ½ x 12 inches. It is fitted with a steel back which gives it additional strength. The firm also make a number of other sizes and styles of cabinets for bolts, seeds or any goods it is desired to keep in this way, the point being made that for such goods as seeds it is proof against mice, &c.



Heller's Bolt Case No. 1736.

Bicycle Towing Cord.

The accompanying illustration shows a device just placed upon the market by the Bicycle Towing Cord Company, Philadelphia, for use in towing a bicycle up a hill. As will be seen, the cord is carried coiled upon a reel, which is nickel plated and attached to the frame of a bicycle by a screw clamp. The construction of the reel is simple, yet strong. A strong spring is used within the reel to take up the cord after use, or to keep the cord taut. When the cord is nearly all out the spring furnishes sufficient resistance to secure a tension which is said to obviate the jerky pull usually experienced in towing as well as break the force of a sudden shock. The clamp by which the cord is attached to the frame of a wheel is adapted to different sizes of tubing, and is instantly attached or detached. The reel is 2½ inches in diameter, ¾ inch thick. The cord is made of a fine quality of flax, and is claimed to stand a strain of over 100 pounds, although only 1-16 inch in diameter. As the average exertion required to pull a bicycle with rider is only from 4 to 6 pounds, the margin of safety is large. The device has the advantage of being always ready, and attachable without either rider dismounting, all that is necessary being to draw the hook out of the reel a foot or two and place it around the post or steering head of the bicycle to be towed. The cord is about 8 fe . long, but the pulling tension is in most cases reached before the full length of the cord is out of the reel. The device may also be used as a coat or baggage carrier.



Bicycle Towing Cord.

L. J. Mead has bought an interest in Walls & Spaulding's business at Reading, Mich., and the firm name is now Walls, Mead & Spaulding.

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Current Hardware Prices.

REVISED OCTOBER 31, 1899.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer are printed in *Italics*, and the prices named represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. They apply to such quantities of goods as are usually purchased by retail merchants. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Cut Prices.—*In the present condition of the market, while many advanced prices are announced by the manufacturers, lower prices are often made by the wholesale trade who have stocks on hand purchased at former quotations.*

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE INDEX SUPPLEMENT (April 6, 1899), which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Adjusters Blind—

Domestic, ₱ doz. $3.00....33⅓@33⅓&10%
North's.....10%
Zimmerman's—See *Fasteners, Blind.*

Window Stop—

Ives' Patent.....25&5%
Taplin's Perfection.....50%

Ammunition—See *Caps, Cartridges, Shells, &c.*

Anvils—American—

Eagle Anvils.....₱ lb 7¼@7¾¢
Hay-Budden, Wrought.....6¾@8¾¢
Horseshoe brand, Wrought.....9¼@9¾¢
Samson.....₱ lb 7¾@8¢
Trenton, Wrought.....₱ lb 8¼@8¾¢

Imported—

Armitage's Mouse Hole.....8¾@9¼¢
Peter Wright's.....9¼@9¾¢

Anvil, Vise and Drill—

Millers Falls Co., $18.00.....20%

Apple Parers—See *Parers, Apple, &c.*

Augers and Bits—

Common Double Spur.60&10&10@...%
Boring Machine Augers.....60&10&10@....%
Car Bits, 12-in. twist.....60&10@....%
Jennings' Pattern:
Auger Bits.....60@....%
Ford's Auger and Car Bits...40&10@40&10&10%
Forstner Pat. Auger Bits.....25%
C. E. Jennings & Co.:
No. 10 ext. lip. R. Jennings' list....40@40&10%
No. 30, R. Jennings' List..50&10@60%
Russell Jennings'.....25&10&2½%
L'Hommedieu Car Bits15&10@15&10&5%
Pugh's Black.....20%
Pugh's Jennings' Pattern.....35%
Snell's Auger Bits.....60&5%
Snell's Bell Hangers' Bits.....5%
Snell's Car Bits, 12-in. twist.....60%
Wright's Jennings Bits (R. Jennings' list).....50%

Bit Stock Drills—

Standard List .....60&10&10@70&5%

Expansive Bits—

Clark's small, $18; large, $26.....50&10%
Lavigne's Clark's Pattern, No. 1, ₱ doz., $26; No. 2, $18.....50&10%
Steer's No. 1, $26; No. 2, $18...40@40&5%
Swan's.....40@40&10%

Gimlet Bits—

Common Double Cut..gro. $2.75@3.25
German Pattern.....gro. $5.00@5.50
Double Cut, makers' lists.....50&5@50&10%

Hollow Augers—

Bonney's Adjustable, ₱ doz.....$18.00
Douglass'.....33⅓@33⅓&10%

Ship Augers and Bits—

Ford's.....40&10@40&10&10%
Snell's.....40%
L'Hommedieu's.....15&10@15&10&10%
Watrous'.....40@40&5%

Awl Hafts, See *Hafts, Awl.*

Awls—

Brad Awls:
Handled.....gro. $2.75@3.10
Unhandled, Shouldered gro.63@66c
Unhandled, Patent.....gro. 66@70c
Peg Awls:
Unhandled, Patent....gro. 31@34c
Unhandled, Shouldered.gro.65@70c
Scratch Awls:
Handled, Common..gro. $3.50@4.00
Handled, Socket..gro. $11.50@12.00

Awl and Tool Sets—See *Sets, Awl and Tool.*

Axes—

First Quality, best brands.$6.00@6.25
First Quality, other brands$5.50@5.75
Jobbers' Special Brands:
Good Quality.....$5.00@5.25
Best Quality .....$5.50@5.75
Cheap, Handled Axes....$4.75@5.00
Beveled, add 25c doz.

Note.—Jobbers' prices are now usually lower than the manufacturers.

Axle Grease—See *Grease, Axle.*

Axles—

	Iron.	Steel.	
Concord, loose collar	6¼c	6 c	10 days.
Concord, solid collar	6¾c	6½c	
No. 1 Common	5 c	4¾c	
No. 1¼ Com. New Style	5½c	5¼c	
No. 2, Solid Collar	5¾c	5½c	
Nos. 7, 8, 11 to 14		.60&10%	
Nos. 7, 8, 11 to 14, 100 sets		.60%	
Nos. 15 to 18		.50%	
Nos. 19 to 22		.60&10%	2% cash

Boxes, Axle—

Common and Concord, not turned..lb. 5c
Common and Concord, turned..lb. 6c
Half Patent.....lb. 9c

Balances—

Sash—

Caldwell low list.....25%
Pullman's.....60%

Spring—

Spring Balances .....60@50&5%
Chatillon's Light Spg. Balances...40&10%
Chatillon Straight Balances.....40%
Chatillon Circular Balances.....50%
Chatillon's Large Dial.....30%

Barb Wire—See *Wire, Barb.*

Bars— Crow—

Steel Crowbars, 10 to 40 lb., per lb....3¾@4c

Beams, Scale—

Scale Beams, List Jan. 12, '88.....35@40&5%
Chattillon's No. 1.....30%
Chattillon's No. 2.....40%

Beaters— Egg—

Standard Co.:
No. 5 Steel Handle Dover..₱ gro. $5.50
No. 10 Cast Handle Dover..₱ gro. $7.00
No. 10 Steel Handle Dover..₱ gro. $7.00
No. 15 Extra Heavy Steel Handle, ₱ gro $14.00
Rival, ₱ gro.....$9.00
Taplin Mfg. Co.: ₱ gro.
No. 50 Small Family size.....$5.50
No. 100 Regular Family size.....$7.00
No. 102 Regular Family size, tin'd.$8.50
No. 150 Large Family size.....$14.00
No. 152 Large Family size, tin'd. $16.00
Lyon's, Standard ....₱ doz. $1.75
Wonder (S. S. & Co.) .....₱ doz. 75¢

Bellows—

Blacksmith—

Standard List.....70@70&5%

Net Prices.

Inch..	30	32	34	36	38	40
Each..	$4.25	4.50	5.25	5.75	6.50	7.75

Extra Length:
Each..$4.75 5.25 5.75 6.50 7.40 8.75

Molders—

Inch..	9	10	11	12	14	16
Doz...	$6.75	7.25	8.50	9.50	12.00	14.50

Hand—

Inch...	6	7	8	9	10	12
Doz....	$3.75	4.25	4.50	5.00	5.75	6.75

Bells— Cow—

Ordinary goods.....75&10%
High grade.....70@70&10%
Jersey.....75@75&10%
Texas Star.....50&10%

Door—

Gong, Yankee.....55%
Hodge, R. & E. Mfg. Co.'s.....50&10%
Lever and Pull, Sargent's.....33⅓&10%

Hand—

Hand Bells, Polished.....55@65&10%
White Metal.....65@65&10%
Nickel Plated.....50@50&10%
Swiss .....60@60&10%

Miscellaneous—

Farm Bells.....lb. 2@2½c
Steel Alloy Church and School.....50&10@60%
Wilmot & Hobbs Mfg. Co, Gongs.65@70%

Belting

Rubber—

Common Standard.....70&10@75%
Standard.....60&10@70%
Extra.....60@60&10%
High Grade.....60@60&10%

Leather—

Extra Heavy, Short Lap .....50&10%
Regular Short Lap .....60@60&5%
Standard .....60&10@60&10&5%
Light Standard.....70&10%

Bench Stops—See *Stops, Bench*

Benders and Upsetters, Tire—

Brettell Tire Upsetter, $15.....50%
Green River Tire Benders and Upsetters.....20%
Stoddard's Lightning Tire Upsetters...40@50%

Bicycle Goods—

Lane's Cycle Hanger.....33⅓&5%
John S. Leng's Son's 1899 list:
Chain.....50%
Parts.....50%
Spokes.....50%
Tubes.....60%

Bits—

Auger, Gimlet, Bit Stock Drills, &c.—See *Augers and Bits.*

Bit Holders—See *Holders.*

Blind Adjusters—See *Adjusters, Blind.*

Blind Fasteners—See *Fasteners, Blind.*

Blind Staples—See *Staples, Blind.*

Blocks— Tackle—

Common Wooden .....75&5@75&10%
Eddy's Steel.....60&10@70%
Hartz Steel.....50&10@60%
Ford's Star Brand, Self Lubricating..70%
Hollow Steel, Ford's Pat. Star Brand...50&10%
Lane's Patent Automatic Lock and Junior 30%
Stowell's Novelty, Mal. Iron.....50&10%
See also *Machines, Hoisting.*

Boards, Stove—

1899 List:
Zinc.....30%
Crystal and Embossed.....40%

Bolts—

Carriage, Machine, &c.—

Common, list Jan. 30, '95....50@50&10%
Norway Iron, $3.00, list Oct. 7, '84...75&10@75&10&5%
Phila. Eagle, $3.00 list....30@30&10%
Bolt Ends, list Jan. 30, '95.....50&10@....%
Machine, list Oct. 1, '99..50&10@....%

NOTE.—*Jobbers' prices on Bolts are now generally lower than manufacturers'.*

Door and Shutter—

Cast Iron Barrel, Round Brass Knob:

Inch.....	3	4	5	6	8
Per doz...	$0.33	.36	.45	.57	.80

Cast Iron Spring Foot:

Inch.....	6	8	10
Per doz.....	$1.00	1.25	1.75

Cast Iron Chain, Flat, Japanned:

Inch.....	6	8	10
Per doz.....	$0.85	1.20	1.50

Cast Iron Shutter, Brass Knobs:

Inch.....	6	8	10
Per doz.....	$0.60	.90	1.15

Wrought Barrel Brass Knob:

Inch.....	3	4	5	6	8
Per doz .	$0.44	.50	.61	.70	1.13

Wrought Barrel .....70&10@75%
Wrought Barrel, Bronzed.50@50&10%
Wrought Flush, B. K.....50&30@70%
Wrought Shutter.....60@60&10&5%
Wrought Square Neck.60&10&10@70%
Wrought Sunk.....60@60&10%
Ives' Patent Door.....62½@62½&10%

Stove and Plow—

Plow .....50&10@60%
Stove, list August 27, 1898..62½@....%

Tire—

Common, list Feb. 23,'83....60@60&10%
American Screw Company:
Norway Phila., list Oct. 16, '84.....70%
Eagle Phila., list Oct. 16, '84.....75%
Bay State, list Feb. 28, '83.....60%
Franklin Moore Co.:
Norway Phila., list Oct. 16, '84.....70%
Eagle Phila., list Oct. 16, '84.....75%
Eclipse, list Feb. 28, '83.....60%
Port Chester Bolt & Nut Company
Empire, list Feb. 28, '83.....60%
Keystone Phila., list Oct. '84.....75%
Norway Phila., list Oct. '84.....70%

Borers, Tap—

Borers Tap, Ring, with Handle:

Inch.....	1¼	1½	1¾	2
Per doz...	$3.50	4.50	5.00	6.50
Inch	.....	2¼	2½	
Per Doz.....	.....	$7.50	10.35	

Enterprise Mfg. Co.....25@30%
No. 1, $1.25; No. 2, $1.65; No. 3, $2.50 each.

Boring Machines—*See Machines, Boring.*

Boxes, Mitre—

Seavey's, per doz., $24.00.....25%

Braces—

NOTE.—*Most Braces are sold at net prices.*

Common Ball, American...$1.10@1.80
Barber's.....60@60&10%
Fray's Genuine Spofford's.....50&10&5%
Fray's No. 70 to 120, 81 to 123, 207 to 414.....50&10&5%
P., S. & W. Co., Peck's Patent.....50&10@60%

Brackets—

Cast Iron, plain.....60&10@70&10%
Wrought Steel.....70&5@70&10%
Bradley's Wire Shelf:
Full cases.....80%
Broken cases.....75&10%

Bright Wire Goods—See *Wire and Wire Goods.*

Broilers—

Wire Goods Co.....75@75&10.

Buckets, Well and Fire—See *Pails*

Bucks, Saw—

Hoosier.....₱ gro. $22.00@$24.00

Bull Rings—See *Rings, Bull.*

Butts— Brass—

Wrought list Sept., '96...25&5@33⅓%
Cast Brass, Tiebout's.....50%

Cast Iron—

Fast Joint, Broad.....45&10@....%
Fast Joint, Narrow.....45&10@....%
Loose Joint.....60&10@60&10&10%
Loose Pin.....60&10@60&10&10%
Mayer's Hinges....60&10@60&10&10%
Parliament Butts..60&10@60&10&10%

Wrought Steel—

Loose Joint.....
Table and Back Flaps..
Narrow and Broad..... 70&5@
Inside Blind..... 70&10%
Loose Pin.....
Loose Pin, Ball and Steeple Tip....80@80&5%

Bronzed Wrought Narrow and Inside Blind Butts.....50&10@50&10&5%

Cages, Bird—

Hendryx, Brass:
3000, 5000, 1100 series.....10%
1200 series.....40%
200, 300, 600 and 900 series.40&10@50%
Hendryx Bronze:
700, 800 series.....40&10@50%
Hendryx Enameled.....40&10@50%

Calipers—See *Compasses.*

Calks, Toe—

Burke's, One Prong, Blunt..5¢.....5%
Burke's, One Prong, Sharp..6¢.....12½%
Burke's Two Prong, Blunt..6¢.....12½%
Burke's Two Prong, Sharp.7¢..10&5&5%

Can Openers—See *Openers, Can*

Cans, Milk—

Buffalo Pattern:	5	8	10 gal.
....	$3.60	$4.00	..33⅓%
Illinois Pattern.	2.90	3.10	3.50..33⅓%
Iowa Pattern...	2.25	3.35	3.75..33⅓%
	20	30	40 qts.
New York Patt'rn	3.75	4.20	4.40..33⅓%
Baltimore Patt'rn	2.60	2.90	3.03 net

Cans, Oil—

Galvanized Blue Band, 1-gal., ₱ doz. $1.60@$1.80
S. S. & Co., Galvanized Family with faucet, 3-gal., ₱ gro. $54, 5-gal., $63; 10-gal., $120.00
Glass Oil.....₱ doz. $1.90@$2.20

Caps—Percussion—

Eley's E. B.....50c
G. D.....per M 52@53c
F. I.....per M 57@60c
G. E.....per M 47@50c
Musket.....per M 57@60c

Primers—

Berdan Primers, $1.00.....5%
B. L. Caps (Sturtevant Shells) $1.00.....5%
All other primers.....*$1.10@$1.12*

Carpet Stretchers—

See *Stretchers, Carpet.*

Cartridges—

B. B. Caps, Con., Ball Swgd.....*$1.90*
B. B Caps, Round Ball....*$1.12@1.18*
Blank Cartridges:
32 C. F., $5.50.....10c&5%
38 C. F., $7.00.....10c&5%
22 cal. Rim, $1.50.....10c&5%
32 cal. Rim, $2.75.....10c&5%
Central Fire.....25%
Pistol and Rifle.....15c&5%
Primed Shells and Bullets.....15c&5%
Rim Fire Sporting.....50%
Rim Fire, Military.....15&5%

Casters—

Red.....60c&10%
Plat.....60c&10%
Plate, part Brass....60c&10%
Philadelphia.....60c&10%
(Extra 10% often given.)
Martin's Patent (Phœnix)....60@60&5%
Payson's Anti-friction Furniture.70&10%
Payson's Anti-Friction Truck....70&10%
Standard Ball Bearing.....45%
Tucker's Patent, low list.....50@50&5%

Cattle Leaders—

See *Leaders, Cattle.*

Chain—

American Coil, Full Casks:

3-16	¼	5-16	⅜	7-16	½	9-16
8.75	6.85	5.85	5.00	4.85	4.75	4.65
⅝	¾	⅞	1 inch.			
4.50	4.40	4.40	4.40 cents per lb.			

Less than Cask lots add ¼@½c per lb.
German Coil, list July 2d, '97.....60c&10@60c&10c&10%
German Halter Chain, list July 24, '97.....60c&10@60c&10c&10%
Trace, Wagon and Fancy Chains, list April, '98.....50c&10@50c&10c&5%
Jack Chain, list July 10, '98:
Iron.....50c&5@60%
Brass.....50c&5@60%
Gal. Pump Chain.....lb. 5@5¼c
Breast, Hitching and Rein Chains.
Covert Sad. Works.....50%
Covert Mfg. Co.:
Breast.....35&2%
Halter.....35&2%
Heel.....35&2%
Rein.....35&2%
Stallion.....35&2%
Oneida Community:
Eureka Coil and Halter...60&5@65&5%
Niagara Coil and Halters.60&5@65&5%
Niagara Cow Ties.....50&5@55&5%
Am. Coil and Halters....50&10&5@60%
Am. Cow Ties.....45@50%

Chalk—(From Jobbers.)

Carpenters', Blue.....*gro. 50@52c*
Carpenters', Red.....*gro. 45@47c*
Carpenters', White.....*gro. 40@42c*
See also Crayons.

Chalk Lines—See *Lines.*

Checks, Door—

Bardsley's.....40&10%
Columbia.....50&10%
Eclipse.....60@60&10%

Chisels—

Socket Framing and Firmer

Standard List.....70c&10@75c&10%
Buck Bros.....30%
Charles Buck.....30%
Swan's.....75@75&5&2½%
L. & I. J. White.....30@30&5%

Tanged—

Tanged Firmers.....40c&10@50%
Buck Bros.....30%
Charles Buck.....30%
L. & I. J. White, Tanged.....25&5%

Cold—

Cold Chisels, good quality lb. 14@16c
Cold Chisels, fair quality.....*lb. 12c*
Cold Chisels, ordinary.....*lb. 8@9c*

Chucks—

Beach Pat., each $8.00.....20%
Skinner Patent Chucks:
Combination Lathe Chucks.....40%
Drill Chucks.....30%
Independent Lathe Chucks.....40%
Improved Planer Chucks.....20%
Universal Lathe Chucks.....40%
Face Plate Jaws.....35%
Union Mfg. Co.:
Combination.....40%
Czar Drill.....30%
Geared Scroll.....33⅓%
Independent.....40%
Union Drill.....30%
Universal.....40%
Face Plate Jaws.....35%

Clamps—

Adjustable, Hammers'.....20@20&5%
Adjustable, Stearns'.....30%
Cabinet, Sargent's.....45&10%
Carriage Makers', P., S. & W. Co..40&10%
Carriage Makers', Sargent's.....50&10%
Beam, Parallel.....33⅓&10%
Lineman's, Utica Drop Forge & Tool Co.....40%
Saw Clamps, see *Vises, Saw Filers'.*

Cleaners, Walk—

Star Socket, All Steel....₱ doz. $4.00 net
Star Shank, All Steel....₱ doz. $3.75 net

Cleavers, Butchers'—

Foster Bros.....30%
New Haven Edge Tool Co.'s...40@40&5%
Nichols Bros., Flat hdl., 30%; Rd. hdl., 40%
Fayette R. Plumb.....25%
P., S. & W.....33⅓&5@33⅓&10%
L. & I. J. White.....25%

Clippers—

Chicago Flexible Shaft Company:
Handy Toilet.....₱ doz. $7.20
Mascotte Toilet.....₱ doz. $8.40
Monitor Toilet.....₱ doz. $9.00
Stewart's Patent.....₱ doz. $10.00

Clips, Axle—

Eagle and Superior ¼ and 5-16 inch.....65c&10@70%
Norway, ¼ and 5-16 inch...65@65c&5%

Cloth and Netting, Wire

—*See Wire, &c.*

Cocks, Brass—

Hardware list (Globe, Kerosene, Lever Bibbs, Racking, &c.).....60c&10@60c&10c&10%

Coffee Mills—See *Mills, Coffee.*

Collars Dog—

Brass, Pope & Stevens' list.....40%
Embossed, Glit, Pope & Stevens' list30&10%
Leather, Pope & Stevens' list.....40%

Compasses, Dividers, &c.

Ordinary Goods.....70c&10@75%
Bemis & Call Hdw. & Tool Co.:
Dividers.....65%
Calipers, Call's Patent Inside.....55%
Calipers, Double.....65&10%
Calipers, Inside or Outside.....65&10%
Calipers, Wing.....60%
Compasses.....50&5%
J. Stevens A. & T. Co.....25&10%

Condensers, Water—

S. S. & Co.: 2-gal., $14.00; 3-gal., $16.00; 4-gal., $18.50; 6 gal., $23.00.

Coopers' Tools—

See *Tools, Coopers'.*

Cord— Sash—

Braided, Drab.....*lb. 21@23c*
Braided, White, Common, lb..*15@16c*
Cable Laid Italian..*lb. A, 18c; B, 16c*
Common India.....*lb. 8½@9½c*
Cotton Sash Cord, Twisted....*10@15c*
Patent Russia.....*lb. 12 @13c*
Cable Laid Russia.....*lb. 13½@14c*
India Hemp, Braided.....*lb. 14@15c*
India Hemp.....*lb. 9@10c*
Patent India.....*lb. 10 c*
Pearl Braided, cotton.....₱ lb 16¢
Massachusetts, White.....₱ lb 20¢
Massachusetts, Drab.....₱ lb 24¢
Eddystone Braided Cotton.....₱ lb 18¢
Harmony Cable Laid Italian.....₱ lb 18¢
Ossawan Mills:
Crown, Solid Braided White...₱ lb 17¢
Braided, Giant, White.....₱ lb 16¢
Peerless:
Cable Laid Italian.....16¢
Cable Laid Russian.....13¢
Cable Laid India.....11¢
Braided India.....18¢
Phœnix, White.....17¢
Samson:
Braided, Drab Cotton.....₱ lb 31¢
Braided, Italian Hemp.....₱ lb 31¢
Braided, Linen.....₱ lb 44¢
Braided, White Cotton, Spot...₱ lb 27¢
Silver Lake:
A quality, Drab, 40¢.....15&10%
A quality, White, 35¢.....15&10%
B quality, Drab, 35¢.....15&10%
B quality, White, 30¢.....15&10%
Italian Hemp, 40¢.....15&10%
Linen, 57½¢.....15&10%

Wire, Picture—

Braided or Twisted.....70@70c&10%

Corn Knives and Cutters

—See *Knives, Corn.*

Crackers, Nut—

Little Giant.....₱ gr. $24.00
Turner & Seymour Mfg. Co.....50%

Cradles—

Grain.....*50%*

Crayons—

White Round Crayons, gross...*5@6c*
Cases, 100 gro., $4.50&$5.00, at factory.
Metal Workers' Crayons...gr. $2.50
Soapstone Pencils, round, flat or square.....gr. $1.50
Rolling Mill Crayons.....gr. $2.50
Railroad Crayons (composition).....gr. $2.00
(Case lots 20%)
See also *Chalk.*

Creamery Pails—See *Pails, Creamery.*

Crooks, Shepherds'—

Fort Madison, Heavy.....₱ doz. $7.00
Fort Madison, Light.....₱ doz. $6.50

Crow Bars—See *Bars, Crow.*

Cultivators—

Victor Garden.....₱ doz. $10.00

Cutters—

Glass—

Smith & Hemingway Co.....40%

Meat—

American.....30%

Nos.	1	2	3	4	5	6
Each	$5	$7	$10	$25	$50	$60

Connecticut:

Nos.	0	1	8	10	12
Each	$1.75	2.25	3.00	3.00	3.50

Enterprise.....25@25&7½%

Nos.	5	10	12	22	32
Each	$2	$3	$2.50	$4	$8

Dixon's, ₱ doz.....33⅓&10%

Nos.	1	2	3	4
	$14.00	$17.00	$19.00	$30.00

Hale's, ₱ doz.....60&10&10@70%

Nos.	11	12	13
	$27.00	$33.00	$45.00

Home No. 1, ₱ doz. $26.00.....60%
Little Giant, ₱ doz.....33⅓@33⅓&5%

Nos.	305	310	312	320	322
	$35.00	$48.00	$44.00	$75.00	$68.00

Miles' Challenge, ₱ doz.....45@45&10%

Nos.	1	2	3
	$22.00	$30.00	$40.00

New Triumph No. 605, ₱ doz. $24.00.....33⅓&5%
Woodruff's, ₱ doz.....40%

Nos.	100	150
	$15.00	$18.00

Chadborn's Smoked Beef Cutter, ₱ doz. $60.00
Enterprise Beef Shavers.....25@30%

Slaw and Kraut—

Henry Disston & Sons:
Slaw, Cabbage, &c.....40%
Kraut Cutters 24 x 7, 26 x 8, 30 x 9.55%
Kraut Cutters 36 x 12, 40 x 12.....40%
Tucker & Dorsey Mfg. Co.:
Kraut Cutters.....50@50&10%
Slaw Cutters, 1 Knife, ₱ gr....$15@$18
Slaw Cutters, 2 Knife, ₱ gr....$20@$27

Tobacco—

All Iron, Cheap.....*doz. $4.50@$5.00*
Enterprise.....25@30%
National, ₱ doz. $21.00.....40%
Sargent's, ₱ doz. $24.00.....60@60&10%

Washer—

Appleton's, ₱ doz. $16.00.....60&10@60&10&10%
Bonney's.....₱ doz. $4.75

Diggers, Post Hole, &c.—

Iwan's Improved Post Hole Auger....40%
Iwan's Perfection Post Hole Digger....₱ doz. $10.00
Never-Break Post Hole Diggers.....60%
Samson, ₱ doz. $34.00.....25%

Dividers—See *Compasses.*

Dog Collars—See *Collars, Dog.*

Door Checks—

See *Checks, Door.*

Door Springs—

See *Springs, Door.*

Drawers, Money—

Tucker's Pat. Alarm Till No. 1, ₱ doz. $18; No. 2, $12; No. 3, $11; No. 4, $12.

Drawing Knives—

See *Knives, Drawing.*

Drills and Drill Stocks—

Common Blacksmiths' Drill..each $1.50@$1.60
Blacksmiths' Self-feeding.....each $5.00@6.00
Bench Drills, Stearns'.....50@50&10%
Breast, Millers Falls, each $3.00.....25%
Breast, P., S. & W.....30@30&10%
Goodell Automatic Drills..40&5@40&10%
Ratchet, Bignall & Keeler.....30&5%
Ratchet, Curtis & Curtis.....25%
Ratchet, Parker's.....40%
Ratchet, Weston's.....20@25%
Ratchet, Whitney's, P. S. & W....40&10%
Whitney's Hand Drill, No. 1, $10.00; Adjustable, No. 10, $12.00.....33⅓%

Twist Drills—

Standard List.....60c&10&10@70c&5%

Drill Bits or Bit Stock Drills—See *Augers and Bits.*

Drill Chucks—See *Chucks.*

Dripping Pans—

See *Pans, Dripping.*

Drivers, Screw—

Balsey's Screw Holder and Driver, ₱ doz. 2½-inch, $6; 4-in., $7.50 6-in., $9..40%
Buck Bros.....30%
Buck Bros' Screw Driver Bits.....27½%
Champion.....40&10%
Disston's Flat Blade, Electric, &c....70%
Douglass Mfg. Co.....20@20&10%
Fray's Hol. Handle Sets, No. 3, $12.00 50%
Gay & Parsons' Ratchet.....35%
Goodell's Automatic.....50&10&10@50&10&10&5%
Mayhew's Black Handle.....50%
Mayhew's Monarch.....45&10%
New England Specialty Co.....50&10%
New York, Manhattan and Handy...20%
Sargent & Co.'s:
Nos. 1, 50, 55 and 60.50&10@50&10&10%
Nos. 20 and 40.....66⅔@66⅔&10%
Screw Driver Bits.....₱ doz. 50@70¢
Stanley's R. & L. Co.'s:
No. 64, Varnished Handles.....70&10%
No. 86.....75&10%

Egg Beaters—See *Beaters, Egg.*

Emery—*Nos. 1 to 5½ to Flour, CF:*

	46 gro.	180 gro.	F.F.F.
Kegs.....*lb.*	4½c	6 c	8 c
½ Kegs....*lb.*	4¾c	5¼c	8¼c
¼ Kegs....*lb.*	5 c	5½c	8½c
10-lb cans, 10 in case.....	6 c	6½c	8½c
10-lb. cans, less than 10....	10 c	10 c	8c

Enameled and Tinned Ware—See *Ware, Hollow.*

Escutcheon Pins—

See *Pins, Escutcheon.*

Extractors, Lemon Juice

—See *Squeezers, Lemon.*

Fasteners, Blind—

Zimmerman's.....50&10%

Faucets—

Cork Lined.....*70c&5@70c&10c&5%*
Metallic Key, Leather Lined.....*65c&10@70%*
Red Cedar.....*50@50c&10%*
B. & L. B. Co.:
West's Lock, Open and Shut Key50&10%
John Sommer's Peerless Tin Key.... 40%
John Sommer's Boss Tin Key.....50%
John Sommer's Victor Metal Key.50&10%
John Sommer's Duplex Metal Key....60%
John Sommer's Diamond Lock.....40%
John Sommer's I. X. L. Cork Lined...50%
John Sommer's Reliable Cork Lined. 50&10%
John Sommer's Common Cork Lined.70%
John Sommer's Chicago Cork Lined..60%
John Sommer's O. K. Cork Lined.....50%
John Sommer's Perfection Cedar....40%
Star.....60@60&5%
Star, Metal Plug new list.....40@40&5%
Lockport, Metal Plug, reduced list.60&5%
Self Measuring:
Enterprise, ₱ doz. $36.00.....40%
Lane's, ₱ doz. $36.00.....33⅓%
National Measuring, ₱ doz. $36.00...40%

Felloe Plates—

See *Plates, Felloe.*

Files—Domestic—

List revised June 1, 1899.
Best Brands.....*70@70c&10%*
Good Brands.....*75@75c&10%*
Fair Brands.....*75c&10@80%*
Second Quality....*80c&10@80c&10c&10%*

Imported—

Stubs' Tapers, Stubs' list, July 24, '97.....*25%*

Fixtures, Grindstone—

Net Prices:

Inch,...	15	17	19	21	24
Per doz.	$3.30	3.55	3.75	4.50	5.25

Stowell's Grant Grindstone Hanger. ₱ doz. $6.00@7.00
Stowell's Grindstone Fixtures....55&10%
P., S. & W. Co.....50&10&10%
Reading Hardware Co.....80&20&10%
Sargent's Patent.....60&10@60&10&10%

Fluting Machines—

See *Machines, Fluting.*

Fodder Squeezers—

See *Squeezers, Fodder.*

Forks—

Aug. 1, 1899, list.
Hay, 2 tine.....*65%*
Hay, 3 tine.....*66⅔%*
Manure, 4 tine.....*70%*
Manure, 5 and 6 tine.....*70%*
Spading.....*70c&5%*
Victor, Hay.....70%
Victor, Manure.....70&8%
Victor, Header.....70&2%
Champion, Hay.....60&20%
Champion, Manure.....70&5%
Columbia, Hay.....66⅔&5%
Columbia, Manure.....70%
Columbia, Spading.....70&10%
Hawkeye Wood Barley 4 tine ₱ doz. $5.00; 6 tine, $6.00.
Plated.—See *Spoons.*

Frames—

Saw—

Red, Polished and Varnished..doz. $1.00@$1.10
White.....*doz. 70@75c*

Screens, Window and Door—

Bonanza Window Screens.....60@60&5%
Phillips' Window Screen Frames..60&5%
Porter's Extension Window Screens. 60&5%
Wabash Spring Adj. Screen.....50%
Warner's Screen Corner Irons, Nos. 0B&00B.....50%

Freezers, Ice Cream—

Qts...	2	3	4	6	8	10
Best.	*$1.40*	*1.60*	*1.85*	*2.30*	*3.00*	*3.90*
Good	*$1.25*	*1.35*	*1.70*	*2.05*	*2.65*	*3.50*
Fair.	*$1.00*	*1.10*	*1.30*	*1.75*	*2.30*	*2.90*

Fruit and Jelly Presses—

See *Presses, Fruit and Jelly.*

Fry Pans—See *Pans, Fry.*

Fuse—

	Per 1000 Feet.
Hemp Fuse.....*$2.60*	
Cotton Fuse.....*2.90*	
Single Taped Fuse.....*3.50*	
Double Taped Fuse.....*4.70*	10%
Triple Taped Fuse.....*5.70*	

Gates, Molasses and Oil—

Stebbin's.....*80c&20@85%*

Gauges—

Marking, Mortise, &c......*60c&10@60c&10c&10%*
Barrett's Comb. Roller Gauge. ₱ doz. $6.75@7.25
Stanley R. & L. Co.'s Butt & Rabbet Gauge.....25&10%
Wire, Brown & Sharpe's.....30%
Wire, Morse's.....25%
Wire, P., S. & W. Co.....10@10&5%

Gimlets—
Nail, Metal, Assorted.gro. $1.40@1.75
Spike, Metal, Assorted gro. $3.00@3 50
Nail, Wood Handled, Assorted, gro. $4.00@4.50
Spike, Wood Handled, Assorted gro. $5 00@5.25

Glass, American Window
List Jan. 1, 1898.
Small lots from store:
Eastern.....80&20%
Western.....80&20@85&5%
From Factory, with Frt. Allowance:
Carloads.....80&15%
1000 boxes or more, Gulf Ports....85&10%
3000 boxes or more.....80&20%
5000 boxes or more.....85%

Glue—Liquid, Fish—
List A, Bottles or Cans, with Brush. 37½@50%
List B, Cans (½ pts., pts., qts.).... 33⅓@48%
List C, Cans (½ gal., gal.) ....25@45%

Glue Pots—See *Pots, Glue.*

Grease, Axle—
Allerton's Axle:
1 lb Tins, ₱ gr.....$9.00
3 lb Tin Pails, ₱ doz., $2.30; 5 lb, $3.00; 10 lb, $6.00.
25 lb wood pails.....₱ doz. $12.00
Dixon's Everlasting....10-lb pails, ea. 85¢
Dixon's Everlasting, in bxs., ₱ doz. 1 lb $1.20; 2 lb $2.00
Lower grades, special brands, ₱ gr. $5.00@6.50

Grindstone Fixtures—
See *Fixtures, Grindstone.*

Gun Powder—See *Powder.*

Hack Saws—See *Saws.*

Hafts, Awl—
gro.
Peg Patent, Leather Top..$1.90@5.25
Peg Patent, Plain Top....$3 50@3 75
Sewing, Brass Ferrule....$1 50@1 60
Saddlers', Brass Ferrule..$1 35@1 45
Peg, Common.....$1.35@1 35
Brad, Common.....$1.50@1.75

Halters and Ties—
Covert Mfg. Co., Web.....45&2%
Covert Mfg. Co., Jute Rope.....45&2%
Covert Mfg. Co., Sisal Rope.....30&2%
Covert's Saddlery Works', 90 list, Web..60&10%
Covert's Saddlery Works, Leather60&10%
Covert's Saddlery Works, Jute....60&5%
Covert's Saddlery Works, Sisal.....60%
Covert's Saddlery Works, Manila..60&5%
Covert's Saddlery Works, Cotton....70%

Hammers—
Handled Hammers—
Heller's Machinists'.....40@40&5%
Magnetic Tack, Nos. 1, 2, 3, $1.25, $1.50, $1.75.....40&10%
Peck, Stow & Wilcox.....40@40&5%
Fayette R. Plumb:
Artisans' Choice, A. E. Nail..33⅓&7½%
Engineers' and B. S. Hand.....50&10%
Machinists' Hammers.....50&10%
A. E. & A. E., Bell Face Nail...33⅓&7½%
Sargent's C. S. New List.....45@45&10

Heavy Hammers and Sledges—
3 lb. and under...lb. 45c
3 to 5 lb.....lb. 36c } 75c&5@75
Over 5 lb.....lb. 30c } &10c&5%
Note.—Lower net prices sometimes made by jobbers.
Wilkinson's Smiths'.....9½c@10c lb.

Handcuffs and Leg Irons
See *Police Goods.*

Handles—
Agricultural Tool Handles—
Hoe, Rake, Fork, &c.....50&10@60%
Shovel, &c..Wood D Handle.50@50&5%

Cross-Cut Saw Handles—
Atkins'.....40%
Champion.....45@45&10%
Disston's.....50%

Mechanics' Tool Handles—
Auger, assorted.....gro. $2 25@$2 50
Auger, large.....gro. $2 75@$3 00
Brad Awl.....gro. $1 40@$1 50
Chisel Handles:
Apple Firmer, gro. ass'd. $2.25@$2 50; large, $2.75@$3.00.
Hickory Firmer, gro. ass'd, $2.25@$2.50; large, $2 50@$2.75.
Socket, gro. ass'd, Firmer, $1.50@$1.60; Framing, $2.50@$2 75.
File, assorted.....gro. $1 00@$1 15
Hammer, Hatchet, Axe, &c...50&10%
Hand Saw, Varnished, doz. 75@80c
Not Varnished.....55@60c
Plane Handles:
Jack, doz. 23@25c; Jack Bolted.. 55@60c
Fore, doz. 35@38c; Fore, Bolted.. 70@75c

Hangers—
Barn Door, New Pattern, Round Groove, Regular:

Inch	3	4	5	6	8
Doz	$1.10	1.50	1.80	2.20	2.90

Barn Door, New England Pattern, Check Back, Round Groove, Regular:

Inch	3	4	5	6
Doz	$2.00	2.50	3.25	4.00

Bigelow & Dowse Co.:
Paragon, No. 1, $3.50; No. 2, $4.50; No. 3, $5.50 ₱ doz.
Chicago Spring Butt Co.:
Friction.....35@35&10%
Oscillating.....35@35&10%
Big Twin.....35@35&10%
Chisholm & Moore Mfg. Co.:
Advance.....55%
Cleveland.....60%
Baggage Car Door.....50%
Elevator.....40%
Railroad.....55%
Czar Ball Bearing, ₱ doz. pair $8.50
No. 10 Roller Bearing .doz. pr. 5.50
No. 20 Roller Bearing .doz. pr. 4.50
Nickel.....50%
J. G. C.....50&2&10%
Lane Bros.:
Parlor, Standard.....40&5&2½%
Parlor, New Model.....40&2½%
Barn Door, Standard.....60&2½%
Covered.....50&10&10%
Special.....60&5%
Lawrence Bros.:
Crown.....60&10%
New York.....60&10@60&10&5%
Sterling.....60&10%
McKinney Mfg. Co.:
No. 2, Standard, $18.....60&10%
No. 1, Special, $13.....60&10%
Stowell Mfg. and Foundry Co.:
Badger.....60&10%
Baggage Car Door.....33⅓%
Climax Anti-Friction.....55&5%
Elevator.....40%
Interstate.....60%
Magic.....50%
Matchless.....50&10%
Nansen.....50&10%
Parlor Door.....50%
Railroad.....55&5%
Street Car Door.....50&10%
Steel, Nos. 300, 400, 500.....45&15%
Wild West.....50&5%
Zenith for Wood Track.....55&5%
Taylor & Boggis Foundry Co.:
Kidder's.....50&50&10%
Van Wagoner & Williams Hdw Co.:
American Trackless.....33⅓&10%
Wilcox Mfg. Co.:
Aurora Steel Endless.....60%
Bike Roller Bearing....60&10&10%
Bike Steel Endless.....60&10&10%
C. J. Roller Bearing.....60&10&10%
Cycle Ball Bearing.....50&10%
Dye Steel.....60&10%
Economical Single Track.50&10&5%
L. T. Roller Bearing.....70%
New Era.....50&10%
New Richards.....60%
O. K. Roller Bearing.....70%
Prindle Improved.....60&10%
Richards' Improved.....60&10%
Richards' Single Track.....50&10%
Wilcox Dwarf Roller Bearing.....40&10%
Wilcox-Ives.....60&10%
Wilcox Tandem Roller Bearing..60&10%
Wilcox Trolley Ball Bearing.....40&10%
Wilcox Trolley Roller Bearing..50%
Wilcox Trolley Roller Bearing, Fire.....40&10%
Wood Track.....60%

Extra 5&10% often given.

Harness Menders—See *Menders.*

Harness Snaps—See *Snaps.*

Hasps—
McKinney's Perfect Hasp, ₱ doz. $1.10 40&10%
Wrought Hasps, Staples, &c.—See *Wrought Goods.*

Hatchets—
Best Brands.....40&12½@50&5%
Cheaper Brands.....60&10@60&5%
Note.—Net prices often made.

Hay and Straw Knives—
See *Knives.*

Hinges—
Blind Hinges—
Lull & Porter:

No.	1	1½	2	2½
Doz. pair	$0 65	.60	.56	.48

1868 Old Pattern:

No.	1	3	5
Doz. pair	$0.74	1.35	2.60

Parker.....75&10@75&10&5%
North's Automatic Blind Fixtures, No. 2, for Wood, $9.00; No. 3, for Brick, $11.50.....10%
Reading's Gravity.....75&10%
Sargent's, Nos. 1, 3, 5.....60%&10%
Sargent's, Nos. 11 & 13.....7 &10@70&10&10%
Wrightsville H'dware Co.:
Acme, Lull & Porter.....75%
Buffalo Gravity Locking, Nos. 1, 3 and 5.....75%
Champion Gravity Locking, No. 75.80%
1868, Old Pat'n, Nos. 1, 3 & 5...75&10%
Tip Pattern, Nos. 1, 3 and 5.....75&10%
Double Locking, Nos. 20 and 25.70&10%
Empire, Nos. 101 and 103.....70%
Niagara Gravity Locking, Nos. 1, 3 and 5.....75&15&5%
Noiseless, Nos. 56, 60, 65 and 55.75&5%
O. S. Lull & Porter.....75&5%
Pioneer, Nos. 060, 45 and 5½.....75&5%
Steamboat Gravity Locking, No. 10..80%
Stanley's Steel Gravity Blind Hinges, ₱ doz. sets $1.20.....20&10%

Gate Hinges—
Clark's or Shepard's—Doz. sets:

No.	1	2	3
Hinges with Latches	$1.90	2.50	4.25
Hinges only	1.30	1.55	3.20
Latches only	0.70	0.70	1.20

New England:
With Latch.....doz. $1.75@1.80
Without Latch.....doz. $1.40@1.45
Reversible Self-Closing:
With Latch.....doz. $1.65@1.75
Without Latch.....doz. $1.30@1.35
Western:
With Latch.....doz. $1.60@1.65
Without Latch.....doz. $1.00@1.05

Spring Hinges—
Holdback, Cast Iron..... gro. $7.00@7.50
Non-Holdback, Cast Iron..... gro. $6.00@6.50

J. Bardsley:
Bardsley's Patent Checking.....10%
Bommer Bros.:
Bommer's.....40%
Chicago Spring Butt Co.:
Chicago.....25%
Garden City Engine House..25%
Keene's Saloon Door.....25%
Coleman Hdw. Co.:
Champion Holdback....₱ gr. $9.00
J. G. C.....₱ gr. $9.00
Nickel.....₱ gr. $9.00
Lawson Mfg. Co.:
Machine.....25%
Matchless Pivot.....40%
Payson Mfg. Co.:
Oblique, Dbl. Acting.....50@50&5%
Stover Mfg. Co.:
Ideal, No. 16, Detachable, ₱ gr. $2.50
Ideal, No. 4.....₱ gr. $9.00
New Idea No. 1.....₱ gr. $9.00
New Idea, Double Acting.....45%
Van Wagoner & Williams Hdw. Co.:
Acme.....30&5%
American.....30%
Columbia, No. 14.....₱ gr. $8.00
Columbia, No. 18.....₱ gr. $24.00
Crown.....30%
Gem.....30%
Knoxall.....₱ gr. $9.00
Oxford.....30%

Extra 10% often given on most of these Hinges.

Wrought Iron Hinges—
Strap and T Hinges, &c., list Mar. 15, 1898:
Light Strap Hinges..66⅔%
Heavy Strap Hinges..70%
Light T Hinges....50&10%
Heavy T Hinges...60&10%
Extra Heavy T Hinges... } *Extra 66⅔%* } *20%@25%*
Hinge Hasps.....45%
Stanley's Corrugated Heavy Strap.....70%
Stanley's Cor. Ex. Heavy T.....66⅔%
NOTE.—*Change in base discounts.*
Rolled Plate.....70@70&10%
Screw Hook and Strap. { *6 to 12 in..lb 3½@3¾c*; *14 to 20 in..lb 3¼@3½c*; *22 to 36 in..lb 3 @3¼c*
Screw Hook and Eye:
¾@1 inch.....lb 5½@5¾c
⅝-inch.....lb 6½@6¾c
½-inch.....lb. 8½@8¾c

Hoes—
Eye—
Scovil and Oval Pattern..60@60&10%
Grub, list Feb. 23, 1899.... 65@65&10%
D. & H. Scovil.....35@35&5%
Handled—
Aug. 1, 1899, List:
Field and Garden.....75&2%
Ladies', Boys', Toy and Onion.. 70&10&10%
Street and Mortar.....75&7½&2%
Cotton.....70&10&10&5&2%
Planters'.....70&30%
Weeding.....75%
Note.—Manufacturers and jobbers use a diversity of lists, and often sell at net prices.
Ft. Madison Crucible Garden Hoe..... 75&2%
Ft. Madison Crescent Cultivator Hoe, per doz.....75&10&2%
Ft. Madison Mattock Hoe, ₱ doz....$4.50
Ft. Madison Sprouting Hoe, ₱ doz..$4.80
Ft. Madison Dixie Tobacco Hoe..... 75&20%
Kretsinger's Cut Easy, per doz....75&2%
Warren Hoe.....%

Hog Rings and Ringers—
See *Rings and Ringers.*

Hoisting Apparatus—
See *Machines, Hoisting.*

Hollow Ware—
See *Ware, Hollow.*

Holders—
Bit—
Angular, ₱ doz. $24.00..... 45&10%
File and Tool—
Nicholson File Holders and File Handles.....33⅓%

Hooks—
Cast Iron—
Bird Cage, Reading..... } .50&10@60%
Bird Cage, Sargent's List..... }
Clothes Line, Sargent's List.....35&10%
Ceiling, Sargent's List.....40@40&10%
Clothes Line, Stowell's..... 70&5%
Clothes Line, Reading List 65&10@65&10&10%
Coat and Hat, Stowell's..... 70&5%
Coat and Hat, Reading.....70@75%
Coat and Hat, Sargent's List.....35&10%
Coat and Hat, Wrightsville.....65&10%
Harness, Reading List.....70&10@75%
Wire—
Belt.....30&10@30&20%
Atlas, Coat and Hat.....50@50&10%
Wire Coat and Hat:
Acme.....60@60&5%
B. B.....70@70&5%
Gem.....66⅔%
Bright Wire Goods—See *Wire.*
Wrought Iron—
Box, or Case, Octagon Steel.... doz. $2.00@2.15
Cotton..... doz. $1.00@1.10
Picture, T. & S. Mfg. Co.....75%
Tassel, T. & S. Mfg. Co.....50&10%
Wrought Staples, Hooks, &c.— See *Wrought Goods.*
Miscellaneous—
Bush, Light, doz. $5.50; Medium, $6 00; Heavy, $6.50

Grass	Nos.	1	2	3	4
Best		$1.60	1.75	2.00	
Common		$1.50	1.50	1.50	1.75

Potato and Manure..... 75&15%
Whiffletree.....lb. 4¼c
Hooks and Eyes:
Brass.....70&10@75%
Malleable Iron.....75&10%

Covert Saddlery Works' Self Locking Gate and Door Hook..... 60&10%
Crown Picture..... 50&10%
Bench Hooks—See *Bench Stops.*
Corn Hooks—See *Knives, Corn.*

Horse Nails—See *Nails, Horse*

Horseshoes—
See *Shoes, Horse.*

Hose, Rubber—
Garden Hose, ¾-inch:
Competition.....ft. 4¾@ 5¼c
3-ply Standard.....ft. 5½@ 6 c
4-ply Standard.....ft. 6½@ 6¾c
3-ply extra.....ft. 6½@ 7½c
4-ply extra.....ft. 7½@ 8½c
High Grade.....ft. 9 @11 c
Cotton Garden, ¾-in., coupled:
Low Grade.....ft. 5½@6c
Fair quality.....ft. 7 c
Good quality.....ft. 8 @ 8½c

Irons—Sad—
From 4 to 10.....lb 2¼@2¾c
B. B. Sad Irons.....lb. 2¾c
Chinese Laundry.....lb. 4¼@4¼c
Chinese Sad.....lb. 3½@3¾c
Mrs. Potts', per set:

Nos.	50	55	60	65
85@$1.00	78@93c	95@1.10	89@1.03	

New England Pressing..lb.. 3¼@3½c

Soldering—
Soldering Coppers.....lb. 28@30c
Covert Mfg. Co..... 20&2%

Pinking—
Pinking Irons.....doz. 50@60c

Jack Screws—See *Screws.*

Jacks, Wagon—
Covert Mfg. Co., Steel.....45&2%
Daisy.....70%
Lockport.....40@40&10%
Victor.....60%
Lane's Steel.....33⅓%

Kettles—
Brass, Spun, Plain, list Jan. 10, '99 15@20%
Enameled and Tea—See *Ware, Hollow.*

Knife Sharpeners—
See *Sharpeners, Knife.*

Knives—
Butcher, Shoe, &c.—
Dick's Butcher Knives.....40%
Foster Bros.' Butcher, &c.....30%
Nichols' Butcher Knives.....50%
Table and Pocket Cutlery and John Wilson's Butcher Knives—Net prices.
Hay and Straw—See *Hay Knives.*
Corn—
Ft. Madison Cut-Easy, ₱ doz.....$3.25
Drawing—
Standard List.....75&5@75&10%
Adjustable Handle.....25@33⅓%
Bradley's.....35%
Swan's.....75@75&5&2½%
Watrous.....30&10@40%
L. & I. J. White.....20&5@25%
Cautelo's Folding.....50@50&5%
Hay and Straw—
Blizzard, from Jobbers.....$5.75@6.00
Iwan's Sickle Edge.....₱ doz. $11.50
Lightning, from Jobbers.....$6.50@7.00
Mincing—
Buffalo.....₱ gro. $15.00
Smith's, ₱ doz., Single, $2; Double, $3 45@50%
Miscellaneous—
Farriers'..... doz. $2 00@3 00
Wostenholme's.....₱ doz. $3.00@3 25
Knobs—
Base, 2¼-inch, Birch, Rubber tip, gro.....$1.20@1.25
Carriage, Jap, all sizes..gro. 35@40c
Door, Mineral.....doz. 78@80c
Door, Por. Jap d.....doz. 92@95c
Door, Por. Nickel....doz. $2 10@2.20
Bardsley's Wood Door, Shutter, &c...10%
Picture, Sargent's.....70&10%
Snow's Victor.....50&10%

Ladies—Melting—
L. & G. Mfg. Co.....60%
P., S. & W.....40@40&10%
Reading.....50&10%
Sargent's.....40@40&10%

Lanterns—Tubular—
Regular Tubular.....doz. $4.00@4.50
Side Lift Tubular....doz. $4.25@4.75
Square Lift Tubular..doz. $4.21@4.75
Other Styles.....40&10@40&10&5%
Meyrose Side Lift Tubular, doz. $8.50... 50&10&5%

Bull's Eye Police—
2¼-inch flash light....doz. $3.50@3.75
3-inch flash light.....doz. $4.00@4.25
2¼-inch regular.....doz. $3.25@3.50
3-inch regular.....doz. $3.50@3.75

Latches, Thumb—
Roggin's Latches.....doz. 35c@45c

Lawn Mowers—
See *Mowers, Lawn.*

Leaders, Cattle—
Small.....doz. 45c; large, 55c
Covert Mfg. Co.....45&2%

Lemon Squeezers—
See *Squeezers, Lemon.*

Lifters, Transom—
Dickson:
3 x 4 ft. x ¼ ..... ₩ 100 $10.00
Other sizes, Iron ..... 70&10%
Other sizes, Brass ..... 70&10%
Excelsior ..... 60@60&10%
Fayson's:
Solid Grip Nos. 643 and 644, ₩ 100, $11.00
Bronze Iron 70%

Lines—
Wire Clothes, Nos... 18 19 20
100 feet $2.50 $2 25 $2 00
75 feet $1.50
Ossawan Mills.
Crown Solid Braided Chalk 33⅓%
Mason's, No. 0 to No. 5 ..... 33⅓%
Silver Lake Braided Chalk, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50; ₩ gr. 30%

Locks, &c.— Cabinet—
Cabinet Locks ..... 33⅓@33⅓&67⅓%

Door Locks, Latches, &c.—
[Net prices are very often made on these goods.]
Reading Hardware Co. 40%
R. & E. Mfg. Co. ..... 47& 0%
Sargent & Co. ..... 40@40&10%
Slaymaker-Barry Co. ..... 30@35%
Snow's Victor ..... 50&10%

Elevator—
Stowell's 33⅓%

Padlocks—
Wrought Iron, list Dec. 8, '97.....
70@70&10%
Dog Collar, S. B. Co 40%
R. & E. Mfg. Co. Wrt. Steel a d Brass. 50%
S. B. & Co 40%

Sash, &c.—
Fitch's Bronze and Brass 66⅔%
Fitch's Iron 70%
Ives' Patent ..... 6⅔&10@66⅔&10%
Fayson's Perfect 70%
Fayson's Signal (new list) 75%
Reading ..... 60&10&10@70%

Machines—

Boring—
Without Augers.

	Upright.	Angular.
Douglas	$2.50	$3.00
Jennings'	2.50	3.00
Millers' Falls	.....	5.75
Snell's, Rice's Pat.	2.50	2.75

Fluting—
Crown Jewel, 6 in. ..... $2.50@2.75

Hoisting—
Moore's Anti-Friction Differential Pulley Block 30%
Moore's Hand Hoist, with Lock Brake. 20%

Washing—
Wayne American, ₩ doz. $27.00
Western Star, No. 2, ₩ doz. 28.00
Western Star, No. 3, ₩ doz 30.00
St. Louis, No. 41, ₩ doz. 60.00
Carload lots 10% off, freight allowed.

Mallets—
Hickory ..... 50@50&10%
Lignumvitæ ..... 50@50&10%
Tinners', Hickory and Applewood, doz. ..... 50@55c
Fiber Head Stearns' ..... 33⅓&10%

Mattocks—
List Feb. 23, 1899 ..... 65@65&10%

Meat Cutters—
See *Cutters, Meat.*

Milk Cans—See *Cans, Milk.*

Mills— Coffee—
Box and Side, list Jan. 1, '88.....
60&5@60&10&5%
Net prices are often made on some goods which are lower than above discounts.
Enterprise Mfg. Co., list Jan. 17, '93..30%
National, list Jan. 1, '94 ..... 30%
Parker's Columbia and Victor ..... 60&10%
Parker's Upright ..... 30&10@40%
Swift, Lane Bros. 30%

Mincing Knives—
See *Knives, Mincing.*

Molasses Gates—
See *Gates, Molasses.*

Money Drawers—
See *Drawers, Money.*

Mowers, Lawn—
Net prices are generally quoted.

	10	12	14	16-inch
Cheap				$1.60@$1.75
Good	3.00	3.25	3 50	3.75
High Grade	4.00	4.25	4.50	4.75

Pennsylvania and Continental ... 60&10%
Philadelphia:
Styles M., S., C., K., T. ..... 70&10%
Style A, all Steel ..... 60&10%
Style E, Low Wheel ..... 60&10%
Style E, High Wheel ..... 70&10%
Drexel an I Gold Coin, low list 50%

Nails—
Cut and Wire. See Trade Report.
Wire Nails and Brads, Papered. List July 20, 1899.. .....
80&10@80&10&5%
Hungarian, Finishing, Upholsterers', &c. See Tacks

Horse—

Nos.	6	7	8	9	10
A. C	25¢	23¢	22¢	21¢	21¢
					40&10&5%
Capewell	19¢	18¢	17¢	16¢	16¢10&5%
C. B. K	25¢	23¢	22¢	21¢	21¢...40%
Champlain	28¢	26¢	25¢	24¢	23¢
					40&5&2%
Maud S.	25¢	23¢	22¢	21¢	21¢
					50&10&5%
Neponset	23¢	21¢	20¢	19¢	18¢...40%
Putnam	23¢	21¢	20¢	19¢	18¢.33⅓%
Standard	23¢	21¢	20¢	19¢	18¢...40%
Star	23¢	21¢	20¢	19¢	18¢
					35& 5%
Vulcan	23¢	21¢	20¢	19¢	18¢.....
					33⅓&5%

Picture—

	1½	2	2½	3	3½ in.
Brass Head	.90	.95	1.00	1.05	1.10 gro.
Por. Head	.85	.90	.95	1.10	1.15 gro.

Nippers, See *Pliers and Nippers.*

Nut Crackers—
See *Crackers, Nut.*

Nuts—
List Feb. 1, '99.
Cold Punched. Off Mfrs. or U S. Standard list.
Hexagon, plain ..... 4.10@4 30c
Square, plain ..... 4.10@4.30c
Square, C. T. & R. ..... 3.90@4.10c
Hexagon, C. T. & R. ..... 4.40@4.60c
Hot Pressed:
Mfrs., U S. or Nar. Gauge Stan'd. Square ..... 4.40@4 60c
Hexagon ..... 4.60@4.80c
NOTE—*Tapped Nuts are now 2-10c. higher than above.*

Oakum—
Best or Government ..... lb. 5¼c
Navy ..... lb 4¾c
U. S. Navy ..... lb. 5¼c
Plumbers' Spun Navy 2¾c
In carload lots ¼c lb. off f.o b. New York.

Oil Tanks—See *Tanks, Oil.*

Oilers—
Brass and Copper ..... 40&10@50%
Tin or Steel ..... 60&10&10@70&5%
Zinc ..... 60&5@65%
Malleable, Hammers' Improved, No. 1, $3.60; No. 2, $4; No. 3, $4.40 ₩ doz. 20%
Malleable, Hammers' Old Pattern, same list ..... 50&10%
Wilmot & Hobbs Mfg. Co ..... 70@70&10%

Openers, Can—
French ..... doz. 35c
Iron Handle ..... doz. 60@75c
Sprague, Iron Hdle..per doz 40@45c
Sardine Scissors...doz. $1.75@$3.00
National, ₩ gro. ..... $1.75@$2.00
Stowell's ..... 75&10%

Packing—
Rubber—
Standard, fair quality ..... 70&10@75%
Inferior quality ..... 75&10@80%
Extra ..... 60&5@60&10&5%
Jenkins' Standard, ₩ ℔ 80¢ ... 25@25&5%

Miscellaneous—
American Packing ..... 9@10c lb.
Cotton Packing ..... 13@14c lb.
Italian Packing ..... 10½@11½c lb.
Jute ..... 5@5½c lb.
Russia Packing ..... 12@13c lb.

Pails—
Creamery—
S. S. & Co., with gauges.. No 1 $6.50; No. 2, $6.75 ₩ doz.

Galvanized—

Inch	10	12	14
Water, Standard, gro	$23 00	$26 00	$29.00
Water, Regular	19.00	22.00	25.00
Water, Heavy	22.00	25.50	28.00
Fire, Rd. Bottom, gro	31.00	33.00	35.00
Well, gro	27.00	29.00	31.00

Pans—
Dripping—
Large Sizes ..... lb. 4¾c
Small Sizes ..... lb. 5¼c
Fry—
Standard List ..... 80@80&10%

Roasting and Baking—
Regal, S. S. & Co., ₩ doz., Nos. 5, $4.50; 10, $5.00; 20 $5.50; 30, $6.00
Simplex, ₩ gro., No. 40, $28.00; 50, $31.50; 60 $35 00; 140, $31.00; 150, $94 50; 160, $39.00.

Paper—
Building Paper—

	Per roll
Rosin Sized Sheathing: 500 sq. ft.	
Light wt., 20 sq. ft. to lb	$0 40@0.45
Medium wt., 12 sq. ft. to lb	
	$0.60@0.65
Heavy wt., extra quality	$0.95@1.05
Medium Grades Water Proof Sheathing	$0 80@1.25
Deafening Felt, 2, 6 and 4½ sq. ft. to lb., ton	$45.00@50.00
York Haven Waterproof Sheathing	$1 35@1.75

Tarred Paper.
1 ply (roll 500 sq ft), ton $35 00@40.00
2 ply, roll 100 sq. ft 90c
3 ply, roll 100 sq. ft $1.20

Sand and Emery—
List April 19, 1886.. 50c@50c&10c&5%

Parers—
Apple—

Advance	₩ doz.	$4.50
Baldwin	₩ doz.	$5.00
Bonanza	each	$5.00
Dandy	each	$7.50
Eureka, 1898	each	$16.00
Family Bay State	₩ doz.	$12.00
Hudson's Little Star	₩ doz.	$4.00
Hudson's Rocking Table	₩ doz	$5.50
Improved Bay State	₩ doz.	$27.00@30.00
New Lightning	₩ doz.	$5.50
Reading 72	₩ doz.	$4.00
Reading 78	₩ doz.	$7.00
Turn Table	₩ doz.	$4.50
Turn Table '98	₩ doz.	$5 50
White Mountain	₩ doz.	$4.00

Potato—

Saratoga	₩ doz.	$5.50
White Mountain	₩ doz.	$4.50

Picks and Mattocks—
List Feb 23, 1899 ..... 65@65&10%

Pinking Irons—
See *Irons, Pinking.*

Pins—
Escutcheon—
Brass ..... 60@60&5%
Iron, list Nov 11, '85 ..... 60@60&5%

Pipe, Cast Iron Soil—
Factory Shipments.
Standard, 2-6 in ..... 50@50&10%
Extra Heavy, 2 6 in ..... 50&10@60%
Fittings ..... 60@60&10%

Pipe, Wrought Iron—
Factory Shipments.
List February, 1899.
Plain and Galvanized:
Carload lots ..... 60&10@50&10&10%
Less than carload lots 50&5@50&10%
Screw and Socket Casing, ... 40&5%
Inserted Joint Casing ..... 35&5%
Cold Drawn Seamless Steel Tubing.. 60%

Planes and Plane Irons—
Wood Planes—
Molding ..... 40&2½@40&5%
Bench, First quality ..... 45&10@45&10&5%
Bench, Second quality ..... 50&10@50&10&5%
Bailey's (Stanley R. & L. Co) 50&10&10@50&10&10&10%
Gage Self Setting 35%

Iron Planes—
Bailey's (Stanley R. & L. Co) ..... 50&10&10@50&10&10&10%
Chaplin's Iron Planes ..... 50&10%
Miscellaneous Planes (Stanley R. & L. Co.) ..... 25&10&10@25&10&10&10%
Sargent's ..... 50&10@60%

Plane Irons—
Wood Bench Plane Irons. ..... 30&5@30&10%
Buck Bros. 30%
Butcher's ..... $5.00@5.25 to £
Stanley R. & L. Co... 50&10@50&10&10%
L. & L. J. White ..... 20&5@25%

Plates—
Felloe ..... lb. 5½@5¾c
Self-Sealing Pie Plates (S. S. & Co.), ₩ doz. $2.00 ..... 50%

Pliers and Nippers—

Gas	7	8	9	10-in
Best		$3 25	$3.50	$4.75 doz.
Good	$1.40	2.25	2.75	3.25 doz.

Acme Nippers 50%
Bernard's:
Parallel Pliers, &c 33⅓%
Paragon Pliers 50%
Lodi Pliers 50%
Elm City Fence Pliers 33⅓%
Button's ..... 65@70%
Heller's Farriers' Pincers and Tools... 40@40&5%
Morrill's Parallel, ₩ doz. $12.00...30&5%
P., S. & W. Cast Steel ..... 30&10@40%
P., S. & W. Tinners' Cutting Nippers, 40@40&5%
Utica Drop Forge & Tool Co.:
Pliers and Nippers, all kinds 40%

Plumbs and Levels—
Plumbs and Levels ..... 70¢10¢10@75¢10¢10%
Disston's 70%
Pocket Levels ..... 75&10&10@75&10%
Stanley R. & L. Co ..... 70&10&10&10@75&10&10%
Stanley's Duplex ..... 25&10@25&10&10%
Woods' Extension 33⅓%

Poachers, Egg—
Buffalo Steam Egg Poachers, ₩ doz., No. 1, $7.20; No. 2, $11.00; No. 3, $11.00; No. 4, $14.50 ..... 50%

Points, Glaziers'—
Bulk and 1 lb. papers.. lb. 10½@11½c
½-lb. papers ..... lb. 11 @12 c
¼-lb. papers ..... lb. 11½@12½c

Pokes, Animal—
Ft. Madison Hawkeye ..... ₩ doz. $3.00
Ft. Madison, Western ..... ₩ doz. $3.50

Police Goods—
Manufacturers' Lists ..... 25@25&10%
Tower's 25%

Polish—Metal—
Prestoline Liquid, No. 1 (½ pt.), ₩ doz. $3.00; No. 2 (1 qt.), $9.72 ..... 40%
Prestoline Paste ..... 33⅓@40%
U. S. Metal Polish Paste, 3 oz. boxes, ₩ doz. 50¢; ₩ gr. $4.50; ½ ℔ boxes, ₩ doz. $1.25; 1 ℔ boxes, ₩ doz. $2.25.
U. S. Liquid, 8 oz. cans, ₩ doz. $1.25; ₩ gr. $12.00.
Barkeepers' Friend Metal Polish, ₩ doz. $1.75; ₩ gr. $18.00.
Wynn's White Silk, ½ pt. cans, ₩ doz. $1.50

Stove—
Joseph Dixon's, ₩ gr. $5.75 ..... 10%
Dixon's Plumbago ..... ₩ ℔ 8¢
Fireside ..... ₩ gr. $2.50
Gem, ₩ gr. $4.50 ..... 10%
Japanese ..... ₩ gr. $3.50
Jet Black ..... ₩ gr. $3.50
Wynn's Black Silk, 5 ℔ pail ..... ₩ ℔ 12¢
Wynn's Black Silk, ½ ℔ box, ₩ doz. $1.00
Wynn's Black Silk, 5 oz. box, ₩ doz. $0.75
Wynn's Black Silk, 8 oz. liq., ₩ doz. $1.00

Poppers, Corn—
Round or Square:
1 qt ..... gro. $7.00@$8.00
1½ qt ..... gro. 9 00@ 10.00
2 qt ..... gro. 10.50@ 11.50
Quincy Corn Popper, 1 qt., ₩ gr. $18.00; 2 qt., $24.00.

Post Hole and Tree Augers and Diggers—
See also *Diggers, Post Hole, &c.*

Potato Parers—
See *Parers, Potato.*

Pots—
Glue—
Enameled ..... 40¢10@50%
Tinned ..... 40¢5@45%

Powder—
In Canisters:
Duck, 1 lb. each 45c
Fine Sporting, 1 lb. each 75c
Rifle, ½-lb. each 15c
Rifle, 1-lb. each 25c
In Kegs:
Duck, 6¼-lb. kegs $2.25
Duck, 12½-lb. kegs $4.25
Duck, 25-lb kegs $8.00
Rifle, 6¼-lb. kegs $2.25
Rifle, 12½-lb. kegs $4.25
Rifle, 25-lb. kegs $4.00
King's Smokeless:
Keg (25 ℔ bulk) $20 00
Half Keg (12½ ℔ bulk) $10.25
Quarter Keg (6¼ ℔ bulk) $5.25
Canister (1 ℔ bulk) $0.90
Case, 1 ℔ Canisters (50 ℔ bulk) $45.00
Half Case, 1 ℔ Canisters (25 ℔ bulk) $22.75
King's Semi-Smokeless:
Keg (25 ℔ bulk) $16.00
Half Keg (12½ ℔ bulk) $8.25
Quarter Keg (6¼ ℔ bulk) $4.75
One Pound Can, bulk $0.50
Keg 25 lbs.
Can 1 lb.

Presses—
Fruit and Jelly—
Enterprise Mfg. Co. ..... 20@25%

Pruning Hooks and Shears—See *Shears.*

Pullers, Nail-
Crown, ₩ doz. $18.00 ..... 50%
Crown Prince, ₩ doz. $15.00 ..... 50%
Diamond B, No. 2, doz. $22.; No. 3, $11 ..... 40%
Eureka, 5 ℔, doz., $16.00; 3 ℔ $15... 40%
Giant, No. 1, ₩ doz. $18; No. 2, $16.50; No. 3, $15 ..... 40%
National, ₩ doz. $24.00 ..... 50%
Pelican, ₩ doz. $9.00 ..... 15&10%
Scranton No. 1 and 2, ₩ doz. $9.00
Scranton, No. 3, ₩ doz. $8.50

Pulleys—

Hay Fork, Swivel or Solid Eye ..... doz. $1.60@2.00

Hay Fork, Stowell's Anti-Friction, 5-in. Wheel, ₱ doz. $12.00..... 40%
Hot House, Awning, &c.....60@60&10%
Japanned Clothes Line.....60@60&10%
Japanned Screw.....70&10&10%
Japanned Side.....70&10&10%
Stowell'sCeiling or End, Anti-Friction 60%
Stowell's Dumb Waiter, Anti-Friction .. 60&10%
Stowell's Electric Light..... .....50%
Stowell's Side, Anti-Friction.....60%
Sash (Auger Mortise):
Common Sense, 1¾ in., ₱ doz., 18¢; 2 in., 20¢.
Empire.....1¾ in., 17¢; 2 in., 19¢
L. C.....1¾ in., 15¢; 2 in., 17¢
Ideal No. 13.....1¾ in., ₱ doz., 18¢
Improved.....1¾ in., 17¢; 2 in., 19¢
Niagara.....1¾ in., 16¢; 2 in., 19¢
No. 26, Troy.....1¾ in., 15¢; 2 in., 19¢
Star.....1¾ in., 16¢; 2 in., 19¢
Acme.....1¾ in., 18¢; 2 in., 20¢
Tackle Blocks—See *Blocks*.

Pumps—

Cistern.....60@60&5%
Pitcher Spout.....75%
Pump Leathers, all sizes....gro. $6.00
Flint & Walling's Fast Mail.....50@55%
Flint & Walling's Pitcher Spout 75%
Myer's Pumps, low list 50%
Contractors' Rubber Diaphragm Non-chokable, B. & L. Block Co.....20%

Punches—

Revolving (4 tubes)...doz. $5.50@8.75
Saddlers' or Drive, good..doz 65@70c
Spring, good quality.....$1.70@1 80
Bemis & Call Co.'s Cast Steel Drive.50&5%
Bemis & Call Co.'s Check.....55%
Bemis & Call Co.'s Spring.....50&5%
Niagara Hollow Punches.....45%
Niagara Solid Punches.....55%
Spring, Leach's Pat.....15%
Steel Screw, B. & K. Mfg. Co.....50%
Tinners' Hollow, P., S. & W. Co..... 35@35&5%
Tinners' Solid, P., S. & W.Co., ₱ doz., $1.44..... .....55%

Rail—

Barn Door, &c.—

Barn Door, Light..In. ⅛ ¾ ¾
100 feet.....$2.25 $2.75 $3.75
B. D., for N. E. Hangers:
Small. Med. Large.
100 feet.....$2 00 2.50 3.00
Sliding Door, Bronzed W'r't Iron, ft. 6⅛c
Sliding Door, Iron Painted..2¼@2¾c
Sliding Door, Wrought Brass, 1¼ in.. ..... lb. 36c..30%
Cronk's Double Braced Steel Rail, ₱ foot..... 3½¢
Lanes' O. N. T., ₱ 100 ft., 1 inch....$3.00
Lanes' Standard, ₱ 100 ft..... .....4.25
McKinney's None Better.....₱ ft. 2¾¢
McKinney's Standard.....₱ ft. 3¼¢
Moore's, W'r't, Bracket, Steel .....3¼¢
Stowell's Steel Rail.....35&10%
Terry's Steel Rail .....₱ ft. 3¼¢

Rakes—

Aug 1, 1899, List:
Cast Steel..... .....70&5&2%
Malleable.....66⅔%
Fort Madison Red Head Lawn. $3.25
Fort Madison Blue Head Lawn.....$3.00

Rasps, Horse—

Disston's 75%
Heller Bros..... .....60&10& 0%
New Nicholson Horse Rasp.....70&10%
See also *Files*.

Razor Strops—

See *Strops, Razor*.

Reels—

Fishing—

Hendryx Aluminum, German Silver, Gold, Bronze, Silver, Rubber, Populo and Salmon, Single Action, Multiplying and Quadruple, all sizes..... 25%
Hendryx Single Action Series, 102P and PN, 202P and PN, 102 PR and PRN, 202 PR and PRN, 304 P and PN, 00304P and PN, 502 and 502N, 802 and 802N, 02084N, Competitor.50%
Hendryx Multiplying and Quadruple Series, 3004N and PN, 4N and PN, 2904N, 2904P and PN, 002904PN, 0924 and 0924N, 5009N and PN.....40&10%

Registers—

For points on Mississippi River and East:
Black Japanned.....30%
White Japanned.....2½%
Bronzed Finishes.....30%
Nickel Plated.....30&10%
Electro Plated in Brass, &c..30&10%
White Porcelain.....20%
Solid Brass and Bronze Metal..20%
Note.—Higher prices are quoted in territory further West.

Rings and Ringers—

Bull Rings—

	2	2½	3 Inch
Steel.....	$1.00	1.10	1.20 doz.
Copper.....	1.30	1.40	1.50 doz.

Hog Rings and Ringers—

Hill's Rings....gro. boxes, $3.75@4.00
Hill's Ringers, G. I.....doz. 50@55c
Blair's Rings..... ₱ gro. $4.25@4.50
Blair's Ringers..... .....₱ doz. 55¢@60¢
Brown's Rings.....₱ gro. $4.25@4.50
Brown's Ringers.....₱ doz. 55¢@60¢
Perfect Rings.....₱ gro. $7.25@7.75
Perfect Ringers, ₱ doz.....75@80¢

Rivets and Burrs—

Copper.....40¢10@50%
Iron or Steel:
Tinners' .....55@55 &10%
Miscellaneous .....55@55 &10%
NOTE.—*This price is often shaded by jobbers.*

Rivet Sets—See *Sets*.

Roasting and Baking Pans—See *Pans, Roasting and Baking*.

Rollers—

Acme, Stowell's Anti-Friction ....50&10%
Barn Door, Sargent's list.60&10&10@70%
Lane's, Stay ....33⅓&5%
Stowell's Barn Door Stay...₱ doz. $1.00

Rope—

Manila, 7-16 in. and larger. lb. .. @15 c
Manila.....⅝-inch lb. .. @15½c
Manila..¼ and 5-16 in. lb. .. @16 c
Manila, Tarred Rope, 15 thread..... lb .. @15 c
Manila Hay Rope Med'm..lb .. @15 c
Sisal, 7-16 in. and larger..lb. .. @10½c
Sisal ....⅝-inch. lb... @11 c
Sisal.....¼ and 5-16 in. lb. .. @11½c
Sisal, Hay Rope, 2 to 10 ply..... lb. .. @10½c
Sisal, Tarred, Medium Lath Yarn..... lb... @10 c
Cotton Rope:
Best, ¼-in. and larger..lb. 15@14 c
Med'm, ¼-in. and larger lb. 10@12 c
Com., ¼-in. and larger.lb. 8@10 c
Jute Rope..... lb. .. @5¾c

Wire Rope—

List July 1, '99.....30&3½%

Ropes, Hammock—

Covert Mfg. Co.....45&2%
Covert Saddlery Works.....60%

Rules—

Boxwood..75¢10¢10¢10@75¢10¢10 ¢10¢10¢10%
Ivory ...40¢10¢10@40¢10¢10¢10¢10%
Lufkin's Steel.....50&10%
Lufkin's Lumber ... .50&10%
Stanley R. & L. Co.:
Boxwood..... 75&10&10@75&10&10&10&10%
Ivory..... .40&10&10@40&10&10&10%

Sad Irons—See *Irons, Sad*.

Sand and Emery Paper and Cloth—

See *Paper and Cloth*.

Sash Cords—See *Cord, Sash*.

Sash Locks—See *Locks, Sash*.

Sash Weights—

See *Weights, Sash*.

Sausage Stuffers or Fillers—See *Stuffers or Fillers, Sausage*.

Saw Frames—

See *Frames, Saw*.

Saw Sets—See *Sets, Saw*.

Saw Tools—See *Tools, Saw*.

Saws—

Note.—Extra 5@10% often given on Circulars Cross Cuts, &c. and extra 5@7½% on Hand, Butcher, &c.
Atkins' Circular.....50%
Atkins' Band 50%
Atkins' Cross Cuts 40%
Atkins' Mulay, Mill and Drag.....50%
Atkins' One-Man Saw..... .....40&10%
Atkins' Wood Saws .....40&10%
Atkins' Hand, Compass, &c..... .....40%
Disston Circular Solid and Inserted Tooth..... .. 50%
Disston Band ⅝ to 1¼ in. wide.....60%
Disston Band ¼ to 1¾.....70%
Disston Crosscuts.....50%
Disston Narrow Crosscuts.....55%
Disston Mulay, Mill and Drag..... .....50%
Disston Framed Woodsaws.....35%
Disston Wood saw Blades.....40%
Disston Woodsaw Rods. 25%
Disston Handsaws, Nos. 12, 99, 9, 16, d100, D8, 120, 7s, 77, 8.....25%
Disston Hand Saws, Nos 7, 107, 10⅞, 3, 1, 0, 00, Combination.....30%
Disston Compass, Keyhole, &c.....25%
Disston Butcher Saws and Blades....35%
C. E. Jennings & Co.'s.....25&5@30&5%
Peace Circular and Mill..... .....45&10%
Peace Cross Cuts, list Jan. 1, '99, 45&10&5%
Peace Hand, Panel and Rip....25&10&5%
Richardson's Circular and Mill...45&10%
Richardson's X Cuts, list Jan. 1, '93, 45&10&5%
Richardson's Hand, &c..... 25&10&5%
Simonds' Circular Saws..... .....50%
Simonds' Crescent Ground Cross Cut Saws..... .....35%
Simonds' One-Man Cross Cuts....40&10%
Simonds' Gang Mill, Mulay and Drag Saws..... .....45@45&5%

Hack Saws—

Disston Concave Backs..... .....25%
Disston Keystone..... .....30%
Disston Hack Saw Frames..... .....30%
Griffin's complete.....50@50&10%
Griffin's Hack Saw Blades....50@50&10%
Star Hack Saws and Blades..... 15&10%

Scroll—

Barnes' No. 7, $15..... .....25%
Barnes' Scroll Saw Blades..... .....40%
Barnes' Velocipede Power Scroll Saw, without boring attachment, $18; with boring attachment, $20..... .....20%
Lester, complete, $10.00..... .....15&10%
Rogers, complete $4.00..... .....15&10%

Scale Beams—

See *Beams, Scale*.

Scales—

Family, Turnbull's..... ...30@50&10%
Hatch, Counter:
Platform, 4 lb. by ½ oz...doz. $5.75
Two Platforms, 8 lb. by ½ oz..... doz. $16 00
Union Platform, Plain....$2.00@2.10
Union Platform, Striped..$2.15@2 25
Chatillon's Eureka..... .....25%
Chatillon's Favorite..... .....40%
Chatillon's Grocers' Trip Scales..... .....50%
Pelouze Scales—Family, Candy, Grocers' and Postal ....33⅓&5%
"The Standard" Portables..... .....45@50%
"The Standard" R. R. and Wagon. ..60%

Scrapers—

Box, 1 Handle .....doz $2.00@2.50
Box, 2 Handle..... doz. $3.00@4.00
Ship, No 1, doz. $3.50; No 2. $2.25@2.50
Adjustable Box Scraper (S. R. & L. Co.) $6.00..... .....40&10%
Foot, W. E. Pratt Mfg. Co. ₱ doz. $1.15@$1.25

Screen Window and Door Frames—See *Frames*.

Screw Drivers—

See *Drivers, Screw*.

Screws—

Bench and Hand—

Bench, Iron..doz. 1 in., $2.40@2.50; 1¼, $2.60@2.65; 1¼, $3.85@3.50
Bench, Wood, Beech..doz. $2.00@2.20
Hand, Wood..... .....35@40%
Hand, Grand Rapids..... .....35%

Coach, Lag and Hand Rail—

Lag, Common Point, list Oct. 1, '99..... .....65¢10@.... .%
Coach and Lag, Gimlet Point, list Oct. 1, '99..... .....65&5@.... .%
Hand Rail, list Jan. 1, '81....83½¢&2%

Jack Screws—

Millers Falls..... .....50&10&10%
Millers Falls, Roller ....50&10%
P., S. & W..... .....40&5&40&10%
Sargent..... .....60&10@60&10&10%

Machine—

List Jan. 1, '98.
Flat or Round Head, Iron.....50%
Flat or Round Head, Brass.....50%

Set and Cap—

Set (Iron or Steel) .....75@75&5%
Sq. Hd. Cap..... .....70@70&5%
Hex. Hd. Cap..... .....70@70&5%

Wood—

List Nov. 10, 1898. Discounts adopted June 28, '99.
Flat Head, Iron..... .....80%
Round Head, Iron..... .....75%
Flat Head, Brass..... .....77½%
Round Head, Brass..... .....72½%
Flat Head, Bronze 72½%
Round Head, Bronze..... .....70%
Drive Screws..... .....82½%
Note.—An extra 5 or 10% is often given.

Scroll Saws—See *Saws, Scroll*.

Scythes—

Scythe Snaths

See *Snaths, Scythe*.

Seeders—

Raisin—

Enterprise..... .....25@30%

Sets—

Awl and Tool—

Brad Awl and Tool Sets:
Wood Hdle., 10 Awls.....doz. $2.00
Wood Hdle., 14 Awls, 6 Tools ... doz. $2.25@2.40
Aiken's Sets, Awl and Tools: No. 20, ₱ doz. $10.00.60&10@60&10&5%
Fray's Adj. Tool H'dls...Nos. 1, $12; 2, $18; 3, $12; 4, $9; 5, $7..... .....50%
Millers Falls Adj. Tool H'dls, No. 1, $12; No. 4, $12; No. 5, $18 .... 15&10%
Stanley's Excelsior: No. 1, $7.50; No. 2 $4.00; No. 3, $5.50..... .....40&10@40&10&5%

Garden Tool Sets—

Ft. Madison Rakes, Shovel and Hoe .... ₱ doz.....$9.00

Nail—

Round, assorted .....gro. $3 25@3.75
Octagon ....gro. $4 25@4.75
Knurled, Good.....gro. $6.00@6.50
Buck Brothers..... .....27½%
Cannon's Diamond Point, ₱ gr. $12..25%
Snell's Corrugated, Cup Pt..... .....50%
Snell's Knurled, Cup Pt..... .....66⅔%

Rivet—

Regular list..... .....70¢5@75%

Saw—

Aiken's Genuine.....₱ doz. $4.50@5.00
Aiken's Imitation .....₱ doz. $3.00@3.10
Atkin's Criterion..... .....₱ doz. $6.00
Atkin's Adjustable..... .....₱ doz. $6.00
Bemis & Call Co.'s Cross Cut.....30&5%
Bemis & Call Co.'s Plate..... .....20%
Bemis & Call Spring Hammer..... .....30&5%
Disston's Star and Mona ch..... .....25%
Hammer, Bemis & Call Co.'s new Pat.40%
Morrill's No. 1, $15.00..... .....40&20%
Nos. 3 and 4, Cross Cut, $23.00.40&20%
No. 5, Mill, $31.00..... .....40&20%
No. 10, $15.50..... .....40&20%
No. 11, $16.00..... .....40&20%
Taintor Positive, ₱ doz. $18 ....60%

Sharpeners, Knife—

Tanite Mills ₱ gross, $14.40....25@33⅓%

Shaves, Spoke—

Iron..... ....doz. $1 00@1 25
Wood..... .....doz. $1.75@2.00
Bailey's (Stanley R. & L. Co.).....50&10%
Goodell's, ₱ doz. $9.00..... .....15&10%

Shears—

Cast Iron...	7	8	9 in.
Best	$16.00	18.00	20.00 gro.
Good.....	$13 00	15.00	17 00 gro.
Cheap....	$9.00	10 00	11.00 gro.

Straight Trimmers, &c.:
Best quality, Jap.....70¢5@70¢10% Nickel..60¢5@60¢10%
Fair qual. Jap...80¢10@80¢10¢10% " Nickel.....75¢5@75¢10%
Tailors' Shears..... .....40@40¢10%
Acme Cast Shears..... .....40@40&5%
Heinisch's Tailors' Shears.....40@40&5%
National Cutlery Co., Nickel .....60&10%
National Cutlery Co., En Hdls...70&1 %
Seymour's, Jan..... .....70@70&5%
Seymour's Nickel..... .....60@60&5%
Seymour's Tailors' Shears..... .....40%
Wilkinson's Hedge..... .....50%
Wilkinson's Sheep..... .....15%

Tinners' Snips—

Forged Handles, Steel Blades..20¢10% Malleable Handles, Laid with Steel. 40%
Forged Handles, Steel Blades, Berlin. 40¢10%
Niagara Snips..... .....40%
Seymour's..... .....40@40&5

Pruning Shears and Tools—

Disston's Combined Pruning Hook and Saw, ₱ doz. $18.00....25@25&10%
Disston's Pruning Hook, ₱ doz. $12.00 25@25&10%
John T. Henry Mfg. Company:
Pruning Shears all grades.....5%&5%
Orange Shears..... .....50&30%
Grape..... .....50&10%
Tree Pruners..... .....75%
P., S. & W. Co..... .....33⅓@33⅓&10%
Seymour's..... .....60&10&10@70&5%

Sheaves—Sliding Door—

Stowell's Anti-Friction..... .....50%
Patent Roller..... ....60&10@60&10&5%
Patent Roller Hatfield's, Sargent's list, 80&10@80&10&7%
Reading..... .....70&10@75%
R. & E..... .....45&10%
Wrightsville, Hatfield Pattern....80&10%

Sliding Shutter—

Reading list..... .....70&10@75%
R. & E..... .....60@60&10%
Sargent's list..... .....50&5@50&10&5%

Shells—

Shells, Empty—

Brass Shells, Empty:
First quality, all gauges..... .....60&5%
Club, Rival, Climax, 10 and 12 gauge .. 65&5%
Paper Shells, Empty:
Club, Rival, Climax, 14, 16 and 20 gauge ($7.50 list)..... .....20&10&5%
Club, Rival, Climax, 10 and 12 gauge .. 33⅓&5%
Acme, Leader, New Rapid, Smokeless, 10, 12, 16 and 20 gau ..... 33⅓&10&5%
Trap and Metal Lined, 10, 12 16 and 20 gauge..... .....33⅓&10&5%
Primrose Club, Bunker Rival, Yellow Rival, New Climax, 10, 12, 16 and 20 gauge..... .....20%
High Base, Nitro, Repeater, Defiance, 10, 12, 16 and 20 gauge..... .....15%

Shells, Loaded—

Loaded with Black Powder..... 40&5%
Loaded with Nitro Powder..... 40¢10¢10¢5%

Ship Tools—

L. & I. J. White 25%

Shoes, Horse, Mule, &c.—

Factory Shipments:
Horse and Mule, per keg...$3.50@3.60
Burden's, all sizes..... .....$3.50
Bryden, Phœnix, Perkins, &c $3.60
Diamond State, Shoenberger, Crescent, &c. $3.60..... .....5%

Shot—

Drop, up to B, 25-lb. bag...$1.35@1.45
Drop, up to B, 5-lb. bag ..... .30
Drop, B and larger, 25 lb. bag.... $1.60@1.70
Drop, B and larger, 5-lb bag..... .35
Buck, 25 lb. bag..... .....$1.60@1.70
Buck, 5-lb. bag..... 35
Chilled, 25-lb. bag.....$1.60@1.70
Dust Shot, 25 lb. bag 2.00
Dust Shot, 5-lb. bag..... ... .50

Shovels and Spades—

No. 2, Polished, Sq. or Rd. Point, D or L Handle:

	A1, 1st Grade.	B2. 2d Grade.
Plain Back ...	$10.50	$9 60
Strap Back....	9.90	9 00
Cleveland Pat'n	10.20	9 30

	C3, 3d Grade.	C4, 4th Grade.
Plain Back....	$8.70	$8.10
Strap Back.....	8.10	7.50
Cleveland Pat'n	8.40	7.80

All other sizes add 30c doz.
Black deduct 30c doz.
Note.—The above recently advanced prices to small retailers are often cut by jobbers.

Shovels and Tongs—

Brass Head .....60&10@60&10&10%
Iron Head .....60&10@60&10&5%

Sieves and Sifters—

Hunter's Imitation, gro. $11.00@12.00
Buffalo Metallic, S. S & Co., ₱ gr.:

14&16	16&18	18&20
$10.00	$12.00	$13.20

Eclipse.....₱ gr. $9.00@ 9.50
Hunter's Genuine....₱ gr. $12.00@12.50
Shaker (Barler's Pat.) Flour Sifters..
₱ doz., $2.00.....93%

Sieves, Wooden Rim—

Mesh 18, Nested, doz.....$0.75@0 80
Mesh 20, Nested, doz..... .85@ .90
Mesh 24, Nested, doz ..... 1.00@1.05

Sinks—

Cast Iron—

Low list.....65@65&5%

NOTE.—*The low list is now generally used, but some jobbers use high list.*

Wrought Steel—

Columbus Galv'd and Enameled..60&5%
Columbus, Painted 45%
L. & G... ... .50%

Skeins, Wagon—

Malleable Iron.....70&10@75&10%
Steel .....45@45&5%
I. I. & B. Co. Steel.....45%

Slates—

"D" Slates.....50&10@50&10&10%
Unexcelled Noiseless Slates.....
60&6 tens@60&6 tens&5%
Wire Bound.....40&10@50%
Double Slates, add $1 case, net.

Slaw Cutters—See *Cutters.*

Snaps, Harness—

German.....50@50&5%
Covert Mfg. Co.:
Derby.....35&2%
High Grade.....45&2%
Jockey.....40&2%
Trojan.....45&2%
Covert's Saddlery Works:
Banner.....60&10%
Crown.....60&10%
Triumph.....60&10%
W. & E. T. Fitch Co.:
Bristol .....40&10%
Empire.....50&5%
National.....50&5%
Clipper.....50&5%
Champion.....40%
Victor.....60&5%
Oneida Community:
Sol d Steel.....65@65&10%
Solid Swivel.. .....65&10@65&10&10%
Sargent's Patent Guarded.....
60%@60%&10%

Snaths—

Scythe.....45&5%

Snips, Tinners'—See *Shears*

Soldering Irons—

See *Irons, Soldering.*

Spoke Trimmers—

See *Trimmers, Spoke.*

Spoons and Forks—

Silver Plated—

Flat Ware .....50&10@60&10%
Wm. Rogers M'g. Co.....50&10%

Miscellaneous—

German Silver .....60&10%
Wm. Rogers Mfg. Co.:
18% German Silver.....60%
Rogers' Silver Metal.....50&10%

Springs—

Door—

Gem (Coil).....20%
Star (Coil).....30%
Torrey's Rod, 39 in....₱ doz. $1.10@1.25
Warner's No. 1, ₱ doz. $1.50; No. 2, $3.40.....55@55&10%
Victor (Coil).....60&10@60&10&5%

Carriage, Wagon, &c.

1¼ in. and wider...Blk. Hf Brt. Brt.
Tested and Temp 5¾ 5¼ 6c lb
Oil Tested and Tempered..... 6½ 6¾ 7c lb
Cliff's Bolster Springs.....35%
Cliff's Seat Springs.....₱ pair 55¢

Sprinklers, Lawn—

Enterprise.....25@30%
Philadelphia No. 1, ₱ doz. $12; No. 2, $15; No. 3, $24.....55%

Squares—

Nickel plated.... } *List May 1, '99..*
Steel and Iron... } *70@70&5%.* %
Rosewood Hdl. Try Square and T-Bevels .....60&10&10&10&10%
Iron Hdl. Try Squares and T-Bevels, 40&10@40&10&10%
Disston's Try Sq. and T-Bevels....60&10%
Winterbottom's Try and Miter...50&10%

Squeezers—

Lemon—

Wood, Common, gro., No. 0, $5.00; No. 1, $6.50; No. 2, $10.00.
Wood, Porcelain Lined:
Cheap .....doz. $1.00@2.75
Good grade..... doz. $3.00@3.50
Tinned Iron .....doz. $0.80@1.25
Iron, Porcelain Lined doz. $3.25@3.50
Jennings' Star.....₱ doz. $1.85@1.90
King.....₱ doz. $2.00

Staples—

Barbed Blind..... lb. 9@9½c
Electricians', Association list.....80%
Fence Staples, same price as Barbed Wire. See Trade Report.
Poultry Netting.....lb. 5½@6c
Grand Crossing Tack Co.'s list....75&10%

Steels, Butchers'—

Dick's..... 40%
Foster Bros'..... 30%
C. & A. Hoffmann's..... 40%
Nichols Bros..... 50%
John Wilson's, list Sept. 1, '94.....25%

Steelyards.....25@25&10%

Stocks and Dies—

Blacksmiths' .....35@40%
Gardner.....50%
Green River.....25%
Lightning Screw Plate.....25%
Little Giant.....25%
Reece's New Screw Plates.....25&30%
Curtis Reversible Ratchet Die Stock.25%

Stone—

Scythe Stones—

Pike Mfg. Co., list '95-'96.....33⅓%
Cleveland Stone Co., list Nov., '92..33⅓%

Oil Stones, &c.

Pike Mfg. Co.:
Hindostan No. 1, ₱ b...8¢
Sand Stone.....5¢ } 33⅓@
Turkey Oil Stone, Extra, 5 to 8 in.....80¢ } 33⅓&10%
Turkey Slips.....$2.00
Lily White Washita.....60¢
Rosy Red Washita.....60¢
Washita Stone, Extra.....50¢
Washita Stone, No. 1.....40¢
Washita Stone, No. 2.....30¢
Lily White Slips.....90¢
Rosy Red Slips.....90¢
Washita Slips, Extra.....80¢
Washita Slips, No. 1.....70¢
Arkansas Stone, No. 1, 3 to 5 in. $2.50
Arkansas Stone, No. 1, 5 to 8 in. $3.50
33⅓@33⅓&10%
Tanite Mills:
Emery Oil, ₱ doz. $5.00.....50@60%

Stoners—

Cherry—

Enterprise.....25@30%

Stops, Bench—

Millers Falls.....15&10%
Morrill's...₱ doz., No. 1, $10.00; No. 2, $11.00, 40&20%

Stops, Window—

Ives' Patent.....25&5%
Taplin's.....45%

Stove Boards—

See *Boards, Stove.*

Stove Polish—See *Polish, Stove.*

Straps, Box—

Cary's Universal case lots.....20&10%

Stretchers, Carpet—

Cast Iron, Steel Points ...doz. 65@70c
Cast Steel, Polished.....doz. $2.25
Socket.....doz. $1.75

Stuffers, Sausage—

Miles' Challenge, ₱ doz. $20...50@50&5%
Enterprise Mfg. Co., list Jan. 17, '93.... 25@25&7½%
National Specialty Mfg. Co., list Jan. 1, '97.....30%

Tacks, Brads, &c.—

List Jan. 15, '99.
Carpet Tacks:
American Blued.....90&10%
American Tinned.....90&10%
American Cut Tacks.....90%
Swedes Iron Tacks.....90&10%
Upholsterers' Tacks .....80&25%
Gimp Tacks.....90&25%
Lace Tacks.....90&25%
Trimmers' Tacks ... .90&10%
Looking Glass Tacks 70%
Bill Posters' and Railroad Tack....
90&20%
Hungarian Nails .....80&15%
Common and Patent Brads.....70&5%
Trunk and Clout Nails:
Blued.....75&5%
Tinned.....75&5%

Miscellaneous—

Double Point Tacks.....90&5@90&10%
Steel Wire Brads, R. & E. Mfg. Co.'s list.....80&10@60%
See also *Nails, Wire.*

Tanks, Oil—

Emerald, S. S. & Co.....80-gal. $3.50
Emerald, S. S. & Co.....60-gal. $4.40
Queen City S. S. & Co., 10-gal.....$3.85
Queen City S. S. & Co., 60-gal.....$4.60

Tapes, Measuring—

American Asses' Skin...40&10@50&5%
Patent Leather.....25@25&10%
Steel.....33⅓@40%
Chesterman's.....25@25&5%
Keuffel & Esser Co., Steel and Metallic, Lower list, 1899..... .....35%
Lufkin's Steel.....33⅓@35%
Lufkin's Metallic .....30&5%

Thermometers—

Tin Case.....80&10@80&10&10%

Ties, Bale—Steel.

Standard Wire.....50&10&5%

Ties, Wall—

Cleveland, Steel.....₱ 1000, $10.00

Tinners' Shears, &c.—

See *Shears, Tinners', &c.*

Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.

Tire Benders, Upsetters, &c.—See *Benders and Upsetters, Tire.*

Tobacco Cutters—

See *Cutters, Tobacco.*

Tools—

Coopers'—

L. & I. J. White .....20@20&5%

Saw—

Atkins' new list.....40%
Simonds' 33⅓%

Transom Lifters—

See *Lifters, Transom.*

Traps—Game—

Oneida Pattern.....70&10@75&5%
Newhouse.....40@40&5%
Hawley & Norton.....60&10@65%
Victor (Oneida Pattern)...70&5@70&10%
Star (Blake Pattern).....65@65&5%

Mouse and Rat—

Mouse, Wood, Choker, doz. holes.8@9c
Mouse, Round or Square Wire..... doz. $0.85@1.00
Marty French Rat and Mouse Traps (Genuine):
No. 1, Rat, ₱ doz. $12.00; case of 24 $10.50
No. 3, Rat, ₱ doz. $5.50; case of 50 $5.00
No. 3½, Rat, ₱ doz. $4.50; case of 72 $4.00
No. 4, Mouse, ₱ doz $3.50; case of 72 $2.75
No. 5, Mouse, ₱ doz. $2.75; case of 150 $2.25
Schuyler's Rat Killer, No. 1, ₱ gr. $13.50; No. 2, ₱ gr. $15.00
Out o' Sight, Mouse, No. 1, ₱ doz. 60¢; Rat, No. 2, $1.25; Mole, $6.00; Gopher, $1.50; Stop Thief, No. 1, $1.25; No. 2, $1.50.

Fly—

Balloon, Globe or Acme..... doz. $1 25; gro. $14.50@15.00
Harper, Champion or Paragon . doz. $1.50; gro. $17.00

Trimmers, Spoke—

Bonney's No. 1, ₱ doz. $3.00; No. ... $4.00
Douglas', ₱ doz. $9.00.....20%
Stearns' .....20&10%

Trowels—

Diston Brick and Pointing..... .....30%
Diston Plastering.....25%
Diston "Standard Brand" and Garden Trowels.....40%
Never-Break Steel Garden Trowels.... gro. $7.00
Peace's Plastering.....25@25&5%
Rose Brick and Plastering...30@30&10%
Woodrough&McParlin, Plast'ring.25&10%

Trucks, Warehouse, &c.—

B. & L. Block Co.'s list.....40%
Daisy Stove Trucks, Improved pattern ₱ doz. $18.00

Tubs, Wash—

	No. 1	2	3
Galvanized, per doz.	*$5.00*	*5 50*	*6.00*

Galvanized S. S. & Co., with Wringer Attachment, ₱ doz., No. 10, $6.25
No. 20, $6.75; No. 30.....$7.50

Twine—

Miscellaneous—

Flax Twine—	*BC*	*B.*
No. 9, ¼ and ½-lb. Balls..	*20c*	*26c*
No. 12, ¼ and ½-lb Balls..	*19c*	*23c*
No. 18, ¼ and ½-lb. Balls..	*16c*	*19c*
No. 24, ¼ and ½-lb. Balls..	*16c*	*19c*
No. 36, ¼ and ½-lb. Balls..	*15c*	*18c*

Chalk Line, Cotton, ½-lb. Balls.... 18@30c
Cotton Mops, 6, 9, 12 and 18 lb. to doz .....7@8c
Cotton Wrapping, 5 Balls to lb ... 9c@10c
American 2-Ply Hemp, ¼ and ½-lb. Balls .....10@12c
American 3-Ply Hemp, 1-lb. Balls.. 10@12c
India 2-Ply Hemp, ¼ and ½-lb. Balls (Spring Twine).....9½c
India 3-Ply Hemp, 1-lb. Balls.... 9½c
India 3-Ply Hemp, 1½-lb. Balls.... 8½@9c
2, 3, 4 and 5-Ply Jute, ½-lb. Balls.7½c
Mason Line, Linen, ½-lb. Balls...45c
No. 264 Mattress, ¼ and ½-lb. Balls.35c
Wool.....6c

Vises—

Solid Box.....50@....%
Bonney's Saw Vises.....40&10%

Parallel—

Athol Machine Co.:
Simpson's Adjustable.....40%
Standard.....40%
Amateur.....25%
Bonney's.....40&10%
Fisher & Norris Double Screw....15&10%
Hollands'.....40@40&10%
Massey's Perfect.....20@25%
Massey's Clincher.....40@40&10%
Merrill's.....20%
Miller's Falls.....45&10%
Parker's:
Victor.....20@25%
Regulars.....20@25%
Vulcan's.....40@45%
Combination Pipe.....55@60%
Prentiss.....20@25%
Sargent's.....66⅔@66⅔&10%
Simpson's Adjustable.....40%
Stephens'.....25@30%
Toles' Woodworking.....25%
Trenton.....40&5@40&10%

Saw Filers—

Bonney's, Nos. 2 & 3, $15.00.. ... 40&10%
Diston's D 3 Clamp and Guide, ₱ doz $30.....25%
Reading.....40&10%
Wentworth's Rubber Jaw, Nos. 1, 2 and 3.....30&7½%

Miscellaneous—

Bignall & Keeler Combination Pipe Vise.....60&5%

Parker's Combination Pipe:
87 Series.....60%
187 Series.....60&5%
No. 870.....40%

Wads—Price Per M.

B. E., 11 up 60c	*Dis. 20&5%*
B. E., 9 and 10.....70c	
B. E., 8 .....80c	
B. E., 7.....80c	
P. E., 11 up.....$1.00	
P. E., 9 and 10..... 1.25	
P. E., 8 ... . 1.50	
P. E., 7..... 1.50	

Ely's B. E., 11 and larger..$1.70@1 75
Ely's P. E., 12 to 20 .....$3 00@3 25

Wagon Jacks—

See *Jacks, Wagon.*

Ware, Hollow—

Aluminum—
S. S. & Co. Reduced List..... .....40%

Cast Iron, Hollow—

Stove Hollow Ware:
Ground.....60@60&7½%
Unground.....65@65&10%
White Enameled Ware:
Muslin Kettles ...75&10@75&10&5%
Boilers and Saucepans...55@55&5%
Tinned Boilers and Saucepans..... 55@55&5%
See also *Pots, Glue.*

Enameled—

Agate Nick l Steel Ware, list July '99..40%
Granite Ware, list Jan. 1, '94, revised Jan. 2, '95 .....40&10%
Second Quality, Agate Nickel Steel..65%
Second Quality, Granite ..... 70&10@70&10&10%
Iron Clad:
Peppered Ware, high list.....70%
Princess Ware, special list.....38½%
Mottled Ware, high list.....75%
Never Break Enameled....50&5@50&10%

Tea Kettles—

Galvanized Tea Kettles:

Inch.....	*6*	*7*	*8*	*9*
Each.....	*40c*	*45c*	*50c*	*60c*

Steel Hollow Ware.

Avery Spiders & Griddles .....65@65&5%
Avery Kettles.....60%
Porcelained.....50&5@50&10%
Never Break Spiders and Griddles..... 65@65&5%
Never Break Kettles.....60@60&10%
Solid Steel Spiders & Griddles. 70@70&5%
Solid Steel Kettles.....60%
Solid Steel Ware, Enameled ..... 50&5%

Silver Plated Hollow—

William Rogers Mfg. Co.....40&10&5%

Washboards—

Solid Zinc: ₱ doz
Crescent, family size, bent frame..$3.00
Ilied Star, laundry size, stationary protector.....$4.25
Double Zinc Surface:
Saginaw Globe, family size, stationary protector.....$2.50
Wilson, family size, bent frame...$2.50
Single Zinc Surface:
Naiad, protector, family size, open back perforated.....$2.25
Saginaw Globe, protector, family size, ventilated back.....$2.10
Wilson, bent frame, family size, ventilated back $2.10

Washers—

Leather, Axle—

Solid.....80&10&10@85%
Patent.....85@85&5%
Coil: ⅞ 1 1¼ 1½ *Inch.*
12c 13c 14c 16c *per 100*

Iron or Steel -

Size bolt ... 5-16 ⅜ ½ ⅝ ¾
Washers....$6.20 5.30 4.00 3.80 3.60
In lots less than one keg add ¼c per lb., 5-lb. boxes add ½c to list.
NOTE –*Jobbers' prices generally lower than manufacturers'.*

Washer Cutters—
See *Cutters, Washer.*

Washing Machines—
See *Machines, Washing.*

Water Coolers—
See *Coolers, Water.*

Weaners—
Tyler's New Halter—No. 1 ₱ doz. $3.45; No. 2, $3.70; No 3, $4.00; No 4, $4 30
Tyler's Safety—Nos. 1 and 2, ₱ doz. $..70; No. 3, $2.00; No. 4, $2 30.

Wedges—
Oil Finish.....*lb.* 3¼@4c
Axe Finish.....*lb.* 4@4¼c

Weights, Sash -
Carloads at factory.....$18.00@20.00
Less than carloads at factory.....
$20.00@22.00
Note —Some Foundries are naming higher prices.

Well Buckets, Galvanized
See *Pails, Galvanized.*

Wheels Well—
8-in., $1 75@2 00; 10-in., $2.25@2 60; 12-in., $2.75@3.25; 14-in., $4 00@4.50

Wire and Wire Goods—
Market: Nos. 6 to 16:
Br. & Ann.....70&5@72½%
Cop'd.....65&5@67½%
Galv.....65&5@67½%
Tin'd, Tin'd list.....73½&5@75%
Stone, Br. and Ann'd:
Nos. 19 to 26.....77½@77½&2½%
Nos. 27 to 36.....77½&5@77½&7½%
Annealed Wire on Spools.....
60&10@60&10&5%
Brass, list Feb. 26, '96.....15%
Copper, list Feb. 26, '96.....15%
Cast Steel Wire.....50%
Stubs' Steel Wire.....$6.00 to £, 40%
Wire Clothes Line, see *Lines.*
Wire Picture Cord, see *Cord.*

Bright Wire Goods—
Iron and Brass, list July 1, 1899....
80&10@80&10&10%

Wire Cloth and Netting—
Galvanized Wire Netting.....
80@80&5%
Painted Screen Cloth per 100 ft ..
$1 30@ ...

Wire Barb—See *Trade Report.*

Wire, Rope—See *Rope, Wire.*

Wrenches—
Agricultural.....75&5@75&10&5%
Baxter's S.....70%
Coes' Genuine.....44½&10&5&3%
Coes' "Mechanics'.33½&10&10&5&3%
Acme.....60&60&5%
Aiken's Pocket (Bright).....$2.00@3.20
Alligator.....60&10&10%
Bemis & Call's:
Adjustable S.....35&5%
Adjustable S Pipe.....40%
Brigg's Pattern.....30&10%
Combination Black.....40&10%
Combination Bright.....40&5%
Cylinder or Gas Pipe.....55%
Extra Heavy.....45%
Merrick's Pattern.....50%
No. 3 Pipe, Bright.....55%
Bindley Automatic.....40%
Boardman's.....33⅓%
Bull Dog, W. & B.....70@70&10%
Donohue's Engineer.....40&10%
Eagle.....50&10%
Hercules.....70&10@75%
Solid Handles, P. S. & W.....50%
Stevenson.....60&10&10%
Stillson's.....55%

Wrought Goods—
Staples, Hooks, &c., list March 17, '92.....85%

Yokes, Neck—
Covert Saddlery Works, Trimmed.60&5%
Covert Saddlery Works, Neck Yoke Centers.....70%

Yokes, Ox, and Ox Bows—
Fort Madison's Farmers & Freighters'... 20%

Zinc—
Sheet.....*lb* 7¾c@8c

PAINTS, OILS AND COLORS.—Wholesale Prices.

White Lead, Zinc, &c.

Lead, Foreign white, in Oil... .. 7½@ 8¾
Lead, American White, in Oil:
Lots of 500 ℔ or over..... .. @ 6
Lots less than 500 ℔..... .. @ 6¼
Lead, White, in oil, 25 ℔ tin pails, add to keg price..... .. @ ½
Lead, White, in oil, 12½ ℔ tin pails, add to keg price..... .. @ 1
Lead, White, in oil, 1 to 5 ℔ assorted tins, add to keg price.. .. @ 1½
Lead White, Dry in bbls..... .. @ 5½
Lead, American. Terms: On lots of 500 lbs. and over, 60 days, or 2% for cash if paid in 15 days from date of invoice.
Zinc, American, dry..... ₱ ℔ 4½@ 5
Zinc, Paris, Red Seal..... .. @ 8½
Zinc, Paris, Green Seal..... .. @ 9½
Zinc, Antwerp, Red Seal..... 7½@ 8
Zinc, Antwerp, Green Seal..... @ 8½
Zinc, V. M. in Poppy Oil, G. Seal -
lots of 1 ton and over..... .. @11¾
lots less than 1 ton..... @12½
Zinc, V.M. in Poppy Oil, Red Seal,
lots of 1 ton and over..... .. @10½
lots of less than 1 ton..... .. @11¼
DISCOUNTS.—V. M. French Zinc.—Discounts to buyers of 10 bbl. lots of one or assorted grades, 1%; 25 bbls., 2%; 50 bbls., 4%. No discount allowed on less than 10 bbl. lots.

Dry Colors.

Black, Carbon.....₱ ℔ 6 @10
Black, Drop, Amer..... 8 @ 5
Black, Drop, Eng..... 5 @10
Black, Ivory..... 9 @20
Blue, Celestial.....₱ ℔ 5½@ 8
Blue, Chinese.....33 @40
Blue, Prussian.....30 @35
Blue, Ultramarine..... 7 @35
Brown, Spanish..... ½@ 1
Brown, Vandyke, Amer..... 2½@ 5%
Brown, Vandyke, Foreign..... 2½@ 5%
Carmine, No. 40, in bulk.....$2.20@2.25
Carmine, No. 40, in ℔ bottles. 2.40@ ..
Carmine, No. 40, in ounce bot. 2.40@3.50
Green, Chrome, ordinary..... 5 @ 6
Green, Chrome, pure..... 19 @23
Lead, Red, bbls. and ½ bbls..... .. @ 6
Lead, Red, kegs..... .. @ 6½
Litharge, bbls. and ½ bbls..... .. @ 6
Litharge, kegs..... .. @ 6½
Ocher, French Washed..... 1½@ 2½
Ocher, German Washed..... 4½@ 5
Ocher, American ... ₱ ton $10.00@15.00
Orange Mineral, English..₱ ℔ 9 @ 9¾
Orange Mineral, French..... .. @11
Orange Mineral, German..... 9 @ 9½
Orange Mineral, American ... 7¾@ 8
Red, Indian, English..... 4½@ 8½
Red, Indian, American..... 3 @ 3¼
Red, Turkey, English..... 7½@10
Red, Tuscan, English..... 7 @10
Red, Venetian, Amer..₱ 100 ℔.80 @1.10
Red Venetian, English ₱ ℔ ... 1½@ 2
Sienna, Italian, Burnt and Powdered.....₱ ℔ 2½@ 5
Sienna, Ital., Raw, Powd..... 2½@ 5
Sienna, American, Raw..... 1½@ 1½
Sienna, American, Burnt and Powdered.....₱ ℔ 1½@ 1½
Talc, French..... ₱ 100 ℔ $1.25 @1.50
Talc, American..... .60 @1.10
Terra Alba, French, ₱ 100 ℔.. 80 @1.00
Terra Alba, English..... 85 @1.00
Terra Alba, American No. 1....85 @70
Terra Alba, American No. 2....45 @50
Umber, Turkey, Bnt. & Pow. ₱ ℔ 2½@ 3½
Umber, Turkey, Raw & Powd. 2½@ 3½
Umber, Bnt. Amer..... 1½@ 1½
Umber, Raw, Amer..... 1½@ 1½
Yellow, Chrome..... 10 @25
Vermilion, American Lead..... 10 @20
Vermilion, Quicksilver, bbls or kegs..... @60
Vermilion, Quicksilver, bags..... @65
Vermilion, Quicks'r, sm'r pkgs..... @60
Vermilion, English, Import.. .67 @68
Vermilion, Artificial..... 5 @20
Vermilion Chinese.... .....80 @90

Colors in Oil.

Black, Lampblack, Best..... 13 @14
Black, Lampblack, Common...10 @11
Blue, Chinese..... 35 @40
Blue, Prussian..... 30 @35
Blue, Ultramarine..... 12 @16
Brown, Vandyke..... 8 @13
Green, Chrome..... 8 @14
Green, Paris..... 20 @24
Sienna, Raw..... 8 @13
Sienna, Burnt..... 8 @13
Umber, Raw..... 8 @12
Umber, Burnt..... 8 @12

Miscellaneous.

Barytes, Foreign, ₱ ton....$18.00@20.00
Barytes, Amer. floated..... 18.00@20.00
Barytes, Crude..... 8.00@10.00
Chalk, in bulk.....₱ ton 2.15@ 2.25
Chalk, in bbls.....₱ 100 ℔ 35@ ..
China Clay, English..₱ ton 15.00@17.00
Cobalt, Oxide.....₱ 100 ℔ 2.00@ 2.10
Whiting, Common ₱ 100 ℔ .42½@ .51
Whiting, Gilders..... .47@ .56
Whiting, extra Gilders'.... .57@ .64

Putty.

In barrels and ½ bbls..... ..@1 7-10
In tubs..... .. @ 1¾
In tin cans..... .. @ 3¼
In bladders..... .. @3.20

Spirits Turpentine.

In Southern bbls..... .. @51 ¢
In machine bbls..... .. @51½¢

Glue.

Low Grade.....₱ ℔ 13 @15
Cabinet..... 13 @16
Medium White..... 14 @16
Extra White..... 16 @25
French..... 12 @25
Irish..... 13 @15

Animal, Fish and Vegetable Oils.

Linseed, City, raw.....₱ gal. 44 @45
Linseed, City, boiled..... ...46 @47
Linseed, S a e a nd West'n, raw 44 @45
Linseed, raw Calcutta seed..... .. @65
Lard, Prime City, present make 43 @45
Lard, Extra No. 1..... .... 35 @37
Lard, No. 1..... 31 @32
Cotton-seed, Crude..... 31 @31½
Cotton-seed, Summer Yellow, prime..... 26 @26½
Cotton-seed Summer Yellow, off grades..... .. ..25 @25½
Sperm, Crude..... .. @ ..
Sperm, Natural Spring..... .. @ ..
Sperm, Bleached Spring..... .. @ ..
Sperm, Natural Winter..... .. @55
Sperm, Bleached Winter..... 60 @ ..
Whale, Crude..... .. @35
Whale, Natural Winter..... .. @45
Whale, Bleached Winter..... .. @48
Whale, Extra Bleached Win.... .. @48
Menhaden, Crude, Sound..... 25 @ ..
Menhaden, Light Pressed..... 28 @29
Menhaden, Bleached Winter.... .. @32
Menhaden, Extra Bleached.... 34 @35
Tallow, Western, prime..... 44 @45
Cocoanut, Ceylon..... .. @ 5¼
Cocoanut, Cochin..... .. @ 7¾
Coi, Domestic..... 33 @35
Cod, Newfoundland..... 34 @40
Red Elaine..... 30 @32
Red Saponified.....₱ ℔ 4½@ 5
Bank..... .. ₱ gal. .. @27
Straits..... @28
Olive, Italian, bbls..... 52 @57
Neatsfoot, prime..... 45 @50
Palm, prime, Lagos.....₱ ℔ .. @ 5¼

Mineral Oils.

Black, 29 gravity, 25@30 cold test.....₱ gal. 10½@11
Black, 29 gravity, 15 cold test. 11½@12
Black, summer..... 10 @10½
Cylinder, light filtered..... 14½@17
Cylinder, dark filtered..... 12½@17½
Paraffine, 903-907 gravity..... 10½@11
Paraffine, 903 gravity..... 9¾@10
Paraffine, 883 gravity..... 9 @ 9¼
Paraffine, red, No. 1..... 10½@10¾
In small lots ½¢ advance.

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CURRENT METAL PRICES.

NOVEMBER 1, 1899.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market report.

IRON AND STEEL—

Bar Iron from Store—

Common Iron: Duty, Round, 0.6¢ ₩ ℔; Square, 0.8¢ ₩ ℔
1 to 1⅞ in. round and square ... } ₩ ℔ 2.50@2.60¢
1¼ to 4 in. x ⅜ to 1 in. ... }
Refined Iron:
1 to 1⅞ in. round and square ... } ₩ ℔ 2.60@2.70¢
1¼ to 4 in. x ⅜ to 1 in. ... }
1¼ to 4 in. x ¼ to 5-16 ... ₩ ℔ 2.80@2.90¢
Rods—¼ and 11-16 round and square. ₩ ℔ 2.80@2.90¢

	Cts ₩ ℔
Angles:	
3 in. x ¼ in. and larger	3.25¢
3 to 3½ in. x 3-16 in.	3.25¢
1¼ to 3 in. x ⅛ in.	3.40¢
1¼ to 2¾ in. x 3-16 in. and thicker	3.30¢
1 to 1¼ in. x 3 16 in.	3.40¢
1 to 1¼ x ⅛ in.	3.50¢
⅝ x ⅛ in.	3.60¢
¾ x ⅛ in.	3.65¢
⅝ x ⅛ in.	4.50¢
⅛ x 3-32 in.	5.00¢
Tees:	
1 in.	3.70¢
1¼ to 2¾ in.	3.60¢
3 in. and larger	3.40¢
Beams	4.00¢
Channels	4.00¢
Bands—1½ to 6 x 3-16 to No. 8 ... ₩ ℔ 3.00 @ 3.10¢	
"Burden's Best" Iron, base price ... ₩ ℔	3.40¢
Burden's "H. B. & S. Iron, base price ... ₩ ℔	3.20¢
"Ulster" ... ₩ ℔	3.40¢
Norway Bars	4 @4½¢
Norway Shapes	4½@5 ¢

Merchant Steel from Store—

	per ℔
Open Hearth and Bessemer Machinery	3.00 to 3 10¢
Toe Calk, Tire and Sleigh Shoe	$3.25@3.50¢
Best Cast Steel, base price in small lots	8 ¢
Best Cast Steel Machinery, base price in small lots	6 ¢

Soft Steel Sheets—

¼ inch	3.30¢	No. 14	3.40¢
8-16 inch	3.40¢	No. 16	3.50¢
No. 8	3 30¢	No. 18	3 55¢
No. 10	3.30¢	No. 20	3.60¢
No. 12	3.35¢	No. 22	3.65¢

Sheet Iron from Store.

Black.

	Common American.	R. G. Cleaned American.
Nos. 10 to 16	₩ ℔, 3.45	3.4 ¢
Nos. 17 to 21	₩ ℔, 3.5[illegible]	3.55¢
Nos. 22 to 24	₩ ℔, 3.5[illegible]	3.65¢
Nos. 25 and 26	₩ ℔, 3.60	3.70¢
No. 27	₩ ℔, 3.65	3.75¢
No. 28	₩ ℔, 3.70	3.85¢

Russia, Planished, &c.

Genuine Russia, according to assortment ... ₩ ℔ 10½¢
Patent Planished ... ₩ ℔ A, 9¾¢; B, 8¾¢, net.
Patent Planished Sheet Steel ... ₩ ℔ 8¼¢

Galvanized.

	B. B.	
Nos. 10 to 16	₩ ℔, 12¢	67½@70% off.
Nos. 17 to 21	₩ ℔, 13¢	
Nos. 22 to 24	₩ ℔, 14¢	
Nos. 25 to 26	₩ ℔, 15¢	
No. 27	₩ ℔, 16¢	
No. 28	₩ ℔, 17¢	
No. 29	₩ ℔, 19¢	
No. 30	₩ ℔, 21¢	

36 in. 1¢ ₩ ℔ higher.

Foreign Steel from Store—

Best Cast	₩ ℔ 14 ¢
Extra Cast	₩ ℔ 16½ @ 17 ¢
Swaged, Cast	₩ ℔ 16 ¢
Best Double Shear	₩ ℔ 14 ¢
Blister, 1st quality	₩ ℔ 12 ¢
German Steel, Best	₩ ℔ 10 ¢
2d quality	₩ ℔ 9 ¢
3d quality	₩ ℔ 8 ¢
Sheet Cast Steel, 1st quality	₩ ℔ 14 ¢
2d quality	₩ ℔ 13 ¢
3d quality	₩ ℔ 11 ¢
R. Mushet's "Special"	₩ ℔ 46 ¢
" " Annealed	₩ ℔ 75 ¢
" " "Titanic"	₩ ℔ 19 ¢
Hobson's Choice XX Extra Best	₩ ℔ 35 ¢
Jessop Self Hardening	₩ ℔ 40 ¢
Seamans' "Nelson" Steel	40 ¢
Hobson Self-Hardening	₩ ℔ 40 ¢

METALS—

Tin—

Duty.—Pigs, Bars and Block. Free.

	Per ℔
Banca, Pigs	34¢
Straits, Pigs	33¢
Straits in Bars	34¢

Tin Plates—

American Charcoal Plates.

Celland Grade:	
IC, 14 x 20	$7.50
IX, 14 x 20	9.00
Melyn Grade:	
IC, 14 x 20	7.00
IX, 14 x 20	8.50
Allaway Grade:	
IC, 14 x 20	6.15
IX, 14 x 20	7.25

American Coke Plates—Bessemer—

IC, 14 x 20 ... 108 ℔	$5.30@5.40
IX, 14 x 20	6.25@6.30
IXX, 14 x 20	7.50@7.60

American Terne Plates—

IC, 20 x 28	$10.50
IX, 20 x 28	12.50

Tin Boiler Plates, American—

IXX, 14 x 26 ... 112 sheets	$13.00
IXX, 14 x 28 ... 112 sheets	14.00
IXX, 14 x 31 ... 112 sheets	15.50

Copper—

Duty: Pig, Bar and Ingot and Old Copper free Manufactured, 2½¢ ₩ lb.

Ingot—

Lake	18¼@19¢
Ansonia grade Casting	17⅞@18¢

Sheet and Bolt—

February 2 1899. Prices, in cents per pound. Sheet 30 x 60. Net.

Not wider than	Not longer than	And longer than	64 oz. & over, 50 lb. sheet, 30 x 60 and heavier.	32 oz. to 64 oz., 25 to 50 lb.	24 oz. to 32 oz., 18¾ to 25 lb.	16 oz. to 24 oz., 12½ to 18¾ lb.	14 oz. and 15 oz., 11 to 12½ lb.	12 oz. and 13 oz., 9½ to 11 lb.	10 oz. and 11 oz., 7½ to 9½ lb.	8 oz. and 9 oz., 6¼ to 7½ lb.	Lighter than 8 oz.
Ins.	Ins.	Ins.									
30	72	.....	22½	22½	22½	22½	23½	24½	25½	28½	31½
30	96	72	22½	22½	22½	22½	23½	25½	28½	31½	
30	.....	96	22½	22½	22½	22½	24½	28½	31½		
36	72	.....	22½	22½	22½	22½	24½	26½	29½	32½	
36	96	72	22½	22½	22½	22½	24½	28½	31½		
36	120	96	22½	22½	22½	23½	25½				
36	.....	120	22½	22½	23½	24½					
48	72	.....	22½	22½	23½	24½	26½	29½	32½		
48	96	72	22½	22½	23½	25½	27½	30½			
48	120	96	22½	22½	24½	26½	30½				
48	.....	120	22½	22½	25½	28½					
60	72	.....	22½	22½	23½	25½	28½	33¼			
60	96	72	22½	22½	24½	26½	31½				
60	120	96	22½	23½	25½	28½					
60	.....	120	22½	24½	26½	30½					
72	96	.....	22½	23½	25½	30½					
72	144	96	22½	24½	27½	32½					
72	.....	144	23½	25½	30½						
108	120	.....	23½	25½	31½						
108	.....	120	25½	28½							
wider than 108	144	.....	26½	28½							
	.....	144	27½	30½							

Bolt Copper, ¾ inch diameter and over, ₩ ℔ 22½¢
Circles, Segments and Pattern Sheets, 3¢ ₩ ℔ advance over price of Sheet Copper required to cut them from.
Cold or Hard Rolled Copper 14 oz. ₩ square foot and heavier, 1¢ ₩ ℔ over the foregoing prices.
Cold or Hard Rolled Copper, lighter than 14 oz. ₩ square foot, 2¢ ₩ ℔ over the foregoing prices.
All Polished Copper, 20 in. wide and under, 1¢ ₩ ℔ advance over the price for Cold Rolled Copper.
All Polished Copper, over 20 in. wide, 2¢ ₩ ℔ advance over the price for Cold Rolled Copper.

Planished Copper—

1¢ ₩ ℔ more than Polished Copper.

Copper Bottoms, Pits and Flats—

14 oz. to square foot and heavier, ₩ ℔ ... 26½¢
12 oz. and up to 14 oz. to square foot, ₩ ℔ ... 27½¢
10 oz. and up to 12 oz., ₩ ℔ ... 29½¢
Lighter than 10 oz., ₩ ℔ ... 31½¢
Circles less than 8 in. diameter, 2¢ ₩ ℔ additional.
Circles over 13 in. diameter are not classed as Copper Bottoms.

Copper Wire—

Hard and Soft Drawn—B. & S. Gauge.

Nos. 0000 to 8	9 and 10		11 and 12
Base	½¢		½¢ ₩ ℔ adv.
Nos. 13	14	15	16
¾¢	⅞¢	1¢	1½¢ ₩ ℔ adv.
Nos. 17	18	19	20
1½¢	2¢	2½¢	2½¢ ₩ ℔ adv.

Seamless Brass Tubes—

Standard always Stubs' gauge, unless otherwise ordered.
Feb. 6, 1899. Net. Outside Diameter.

Stubs' W. G.	B. & S. W. G.	¼	5-16	⅜	7-16	½	9-16	⅝	¾	⅞	1	1¼	1½
4-11	3- 9	...	.....	...	.....	33	31	30	29	28	27	25	24
12	10	...	.....	37	35	33	31	30	29	28	27	25	24
13	11	...	.....	37	35	33	31	30	29	28	27	25	24
14	12	...	41	37	35	33	31	30	29	28	27	25	24
15	13	...	42	39	36	33	32	31	30	30	28	26	25
16	14	...	43	39	37	34	33	32	31	30	29	26	25
17	15	...	44	40	38	35	34	33	32	31	30	27	26
18	16	61	46	42	39	36	35	34	33	31	30	28	27
19	17	62	47	43	40	37	36	35	34	33	32	30	29
20	18-19	64	49	44	41	39	38	37	36	35	34	32	31
21	20	66	51	45	43	41	40	39	38	37	36	35	34
22	21	71	56	48	44	42	41	40	39	38	37	37	36
23	22	76	61	52	46	44	43	42	41	40	39	39	39
24	23	81	66	57	48	46	45	45	44	43	41	40	40
25	24	86	71	62	51	49	47	46	45	45	43	43	44

Copper Bronze and Gilding Tube, 3¢ ₩ ℔ additional

Iron Pipe Sizes—Brass

⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6 inch
36	32	29	27	21	21	21	21	21	21	21	20	23	25	27	2×₩℔

Copper, Bronze or Gilding Tubes, 3¢ ₩ ℔ additional

Brazed Brass Tubing.

(*To No. 19, inclusive.*) Feb. 26 1896
Brown & Sharpe's gauge standard.

	Per ℔.
Plain Round Tube, ¼ in. up to 2 in.	$0.35
" " ⅜ " ¾ "	.36
" " ½ " ¾ "	.38
" " ⅝ " ⅞ "	.41
" " 5-16 " ⅞ "	.48
" " ¼ " 5-16 "	.65
" " 3-16 " ¼ "	1.00
" " ¼ " 3-16 "	1.50
Smaller than ¼ inch	Special
3 inch and larger	.40
Over 3 inch to 3½ inch, inclusive	.45
Over 3½ inch	.50

Bronze and Copper, advance on Brass List, 3 cents.
Discount from list $ ... 20@25%

Roll and Sheet Brass—

(*Brown & Sharpe Standard Gauge.*)

Common High Brass	in.	in.	in.	in.	in.	in.	in.	in.	in.
Wider than	2	12	14	16	18	20	22	24	26
and including	12	14	16	18	20	22	24	26	
To No. 20, inclusive	.22	.23	.25	.27	.29	.31	.33	.36	
Nos. 21, 22, 23 and 24	.22	.24	.26	.28	.30	.32	.34	.37	
Nos. 25 and 26	.23	.24½	.27	.29	.31	.33	.35	.38	
Nos. 27 and 28	.23	.25	.28	.30	.32	.34	.36	.39	

Common High Brass	in.	in.	in.	in.	in.	in.	in.	in.
Wider than	26	28	30	32	34	36	38	40
and including	28	30	32	34	36	38	40	
To No. 20, inclusive	.39	.42	.46	.50	.55	.60	.65	*
Nos. 21, 22, 23 and 24	.40	.43	.47	.51	.56	.61	.68	
Nos. 25 and 26	.41	.44	.48	.52	.57	.63	.71	
Nos. 27 and 28	.42	.45	.49	.53	.58	.65	.75	

* Special prices not less than 80 cents.
Add ½¢ ₩ ℔ additional for each number thinner than Nos. 28 to 38 inclusive. Discount from List ... 10%

Wire in Coils. List February 26, 1896.

Brown & Sharpe's gauge the standard.	Com. high brass.	Low brass.	Gild'g bronze and copper
All Nos. to No. 10, inclusive	$0.23	$0.27	$0.28
Above No. 10 to No. 16	.23½	.27½	.28½
No. 17 and No. 18	.24	.28	.32
No. 19 and No. 20	.25	.29	.33
No. 21	.26	.30	.34
No. 22	.27	.31	.35
No. 23	.28	.32	.36
No. 24	.30	.34	.38
No. 25	.32	.36	.40
No. 26	.35	.39	.43
No. 27	.38	.42	.46
No. 28	.42	.46	.51
No. 29	.45	.49	.54
No. 30	.48	.52	.62
No. 31	.51	.55	.67
No. 32	.55	.59	.73
No. 33	.59	.63	.82
No. 34	.64	.68	.95
No. 35	.70	.74	1.30
No. 36	.76	.80	1.50
No. 37	1.00	1.04	1.70
No. 38	1.30	1.34	2.00
No. 39	2.00	2.00	3.25
No. 40	2.60	2.60	5.75

Discount, Brass Wire, 10%; Copper Wire, NET. List November 16, 96.
Spring Wire, 2¢ ₩ ℔ advance.

Spelter—

Duty: In Blocks or Pigs, 1¢ ₩ ℔

Western Spelter ... 5¾@6¢

Zinc.

Duty: Sheet, 2¢ ₩ ℔.

600 ℔ casks ... 8¼¢ | Per ℔ ... 8¾¢

Lead.

Duty: Pigs and Bars and Old, 2½¢ ₩ ℔. Pipe and Sheets, 2½¢ ₩ ℔.

American Pig ... 5@5¼¢
Bar ... 5¾¢
Pipe (full lengths), subject to discount 20% ... 6¾¢
Pipe (cut lengths), subject to discount 20% ... 7¼¢
Tin Lined Pipe, subject to discount 20% ... 12¼¢
Block Tin Pipe, subject to discount 20% ... 45¢
Sheet (full rolls) subject to discount 20% ... 7¾¢
Sheet (cut rolls (subject to discount 20% ... 8¾¢
Old Lead in exchange, 4¢ ₩ ℔.

Solder.

½ & ¼, guaranteed ... 20¼@21¢
No. 1 ... 18@18½¢

Prices of Solder indicated by private brand vary according to composition.

Antimony—

Duty, ¾¢ ₩ lb.

Cookson	₩ ℔ 11½¢
Hallett's	₩ ℔ 10½¢
U. S.	₩ ℔ 10½¢

Aluminum—

Duty: Crude, 8¢ ₩ ℔. Plates, Sheets, Bars and Rods, 13¢ ₩ ℔.

No. 1 Aluminum (guaranteed over 99% pure), in ingots for remelting:
Small lots ... ₩ ℔ 37¢
100-℔ lots ... ₩ ℔ 35¢
No. 2 Aluminum (guaranteed to be over 90% pure), in ingots for remelting:
Small lots ... ₩ ℔ 34¢
100-℔ lots ... ₩ ℔ 33¢

Aluminum Sheet, B. & S. gauge. 50 ℔ or more.

Wider than	6-in.	14-in.	24-in.
And including	14-in.	24-in.	30-in.
	₩ ℔.	₩ ℔.	₩ ℔
Nos. 13 to 19	$0.40	$0.43	$0.45
No. 20	.42	.44	.47
Nos. 21 to 23	.44	.46	.49
No. 24	.44	.48	.51
No. 25	.45	.49	.52
No. 26	.45	.52	.57
No. 27	.46	.55	.60
No. 28	.46	.55	.62
No. 29	.47	.58	.67
No. 30	.48	.62	.75

Note.—Lots of less than 50 ℔ 5¢ ₩ ℔ extra.

Aluminum Wire, B. & S. Gauge.

Larger than No. 9	₩ ℔ 40¢	No. 15	₩ ℔ 43¢
No. 9 to No. 10	₩ ℔ 40½¢	No. 17	₩ ℔ 50¢
No. 11	₩ ℔ 41 ¢	No. 18	₩ ℔ 55¢
No. 12	₩ ℔ 41½¢	No. 19	₩ ℔ 60¢
No. 13	₩ ℔ 42 ¢	No. 20	₩ ℔ 65¢
No. 14	₩ ℔ 42½¢	No. 21	₩ ℔ 85¢

Old Metals.

Dealers' Purchasing Prices Paid in New York.

Heavy Copper	₩ ℔ 15 ¢
Light and Tinned Copper	₩ ℔ 13½¢
Heavy Brass	₩ ℔ 11 ¢
Light Brass	₩ ℔ 8¼¢
Lead	₩ ℔ 3½¢
Tea Lead	₩ ℔ 3¼¢
Zinc	₩ ℔ 4 ¢
No. 1 Pewter	₩ ℔ 18 ¢
No. 2 Pewter	₩ ℔ 17 ¢
Tin Plate Scrap	₩ ton $5.00
Wrought Scrap Iron	₩ gross ton $15.50
Heavy Cast Scrap	₩ gross ton $14.00
Stove Plate Scrap	₩ gross ton $9.50
Burnt Iron	₩ gross ton $7.50